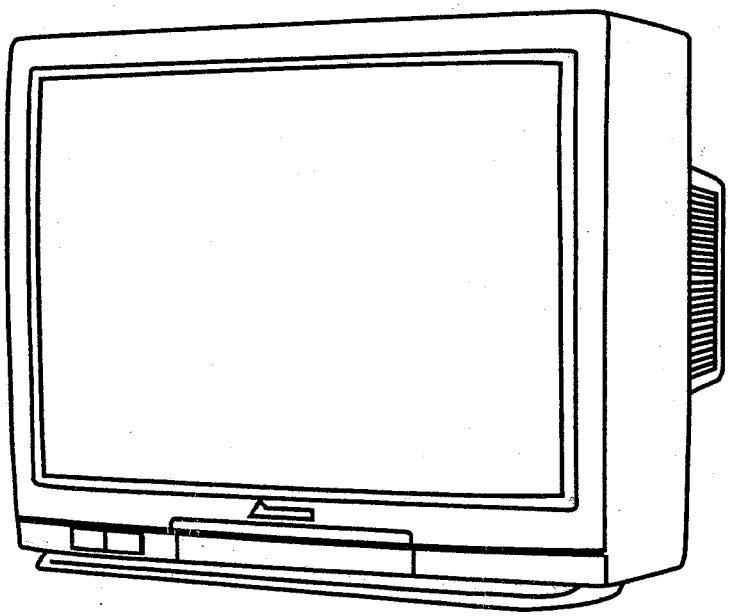
1991

MITSUBISHI

Service Manual



MODEL

CT-25M1EPM
CT-25M1EM(G)
CT-25M1EPT
CT-25M1ETM

MITSUBISHI ELECTRIC

SPECIFICATION

Reception System	CCIR – B/G PAL/SECAM [EM(G)] CCIR – B/G PAL [EPM, EPT, ETM]
Reception Frequency	VHF 47~68MHz/174~223MHz [EM(G), EPM, EPT] 47~89MHz/104~230MHz/230~470MHz [ETM] UHF 470~862MHz
Mains Input	AC230V 50Hz
Power Consumption	96W [EM(G)] 74W [EPM] 95W [EPT, ETM]
Aerial Input	75 Ω
Intermediate Frequency	Video 38.9MHz Sound 33.4MHz
Audio Output	5W (Music Power)
Speaker	100mm × 150mm Oval 2pcs 3.9inch 5.9inch
Chassis	EURO 10
Picture Tube	A59EAK01X01 25″ 110° Deflection
Cabinet Dimensions (Approx.)	574mm(W) × 541mm(H) × 541mm(D) 22.6inch 21.3inch 21.3inch
Weight (Approx.)	29.5kg (65.1 lbs)

SAFETY PRECAUTIONS

NOTICE : Observe all cautions and safety related notes located inside the receiver cabinet and on the receiver chassis.

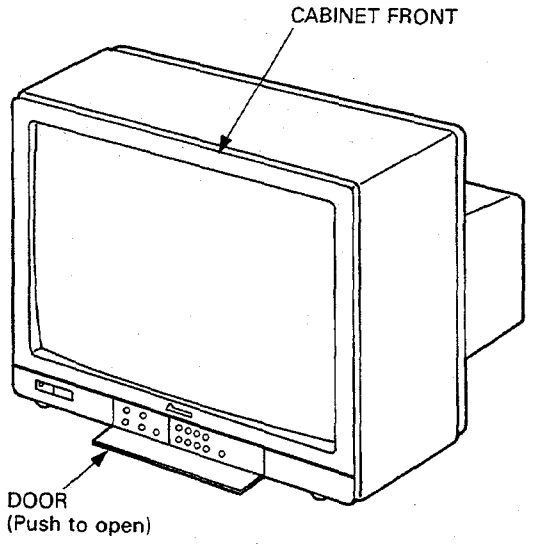
WARNING

1. An isolation transformer should be used between the television receiver and the AC supply point before any test/service is performed on a HOT chassis television receiver.
2. Operation of these receivers outside the cabinet or with the cover removed, involves a shock hazard from the receiver power supplies. Work on the receiver should not be attempted by anyone who is not throughly familiar with precautions necessary when working on high voltage equipment.
3. Do not install, remove or handle the picture tube in any manner unless shatter – proof goggles are worn. People not so equipped should be kept away while the picture tube is being handled. Keep the picture tube away from the body while handling.
4. When service is required, observe the original lead dressing. Extra precaution should be given to assure correct lead dressing in the high voltage area. Where a short – circuit has occurred, replace those components that indicate evidence of overheating.

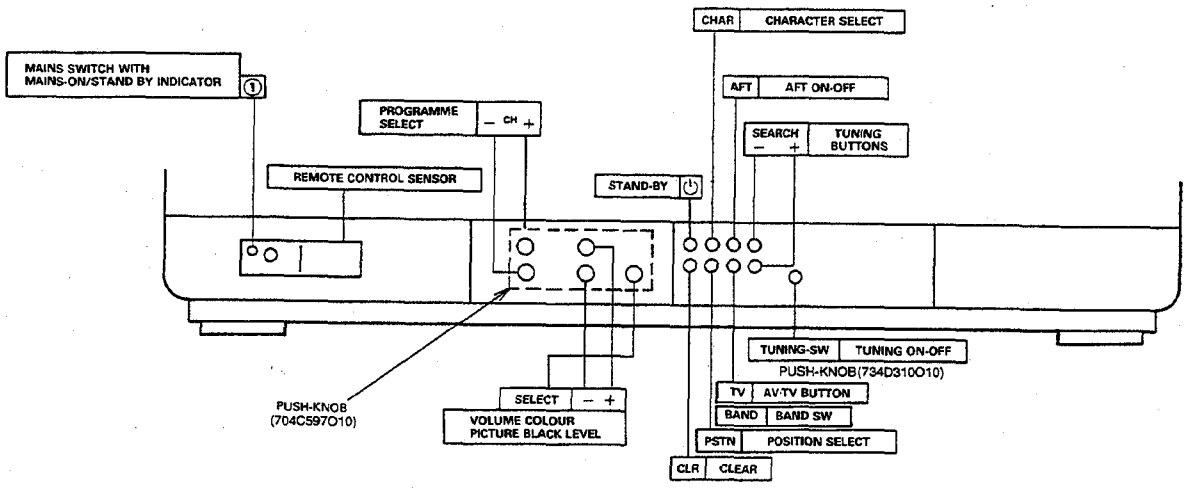
LEAKAGE CURRENT COLD CHECK

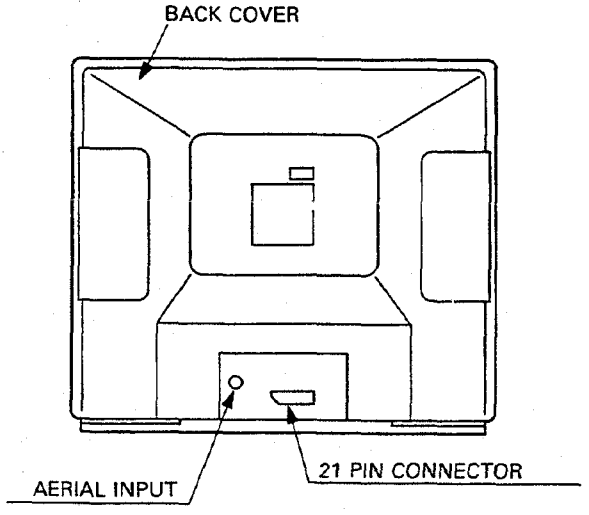
Before returning the receiver to the customer, it is recommended that the leakage current be measured according to the following methods.

With the AC plug removed from the AC source, place a jumper across the two AC plug prongs. Turn the receiver AC switch on. Using an OHM – METER, connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (antennas, screwheads, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistance reading of 1 Meg ohm. Any resistance below this value indicates an abnormality which requires corrective action.

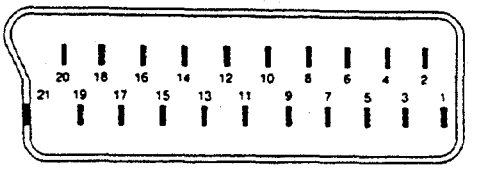


INSIDE CONTROL DOOR





21 PIN CONNECTOR



1. AUDIO OUT R
2. AUDIO IN R
3. AUDIO OUT L
4. AUDIO EARTH
5. BLUE EARTH
6. AUDIO IN L
7. BLUE IN
8. FUNCTION SWITCH
9. GREEN EARTH
10. NOT CONNECTED
11. GREEN IN
12. NOT CONNECTED
13. RED EARTH
14. BLANKING EARTH
15. RED IN
16. RGB BLANKING
17. VIDEO EARTH (OUT)
18. VIDEO EARTH (IN)
19. VIDEO OUT
20. VIDEO IN
21. SOCKET EARTH

Fig. 1. Control and Cabinet Parts

LEAD DRESSING

The lead wires to be clamped are listed in the table below.

Note: The inner wires are routed or clamped so that they do not come close to the heat generating or high-tension parts. After servicing route all wires in their original position.

The anode lead wires are routed so no tensile strength is applied to the anode cap. If the mounting angle of the anode cap and the route of the anode lead wires are changed, return them to the initial angle and route.

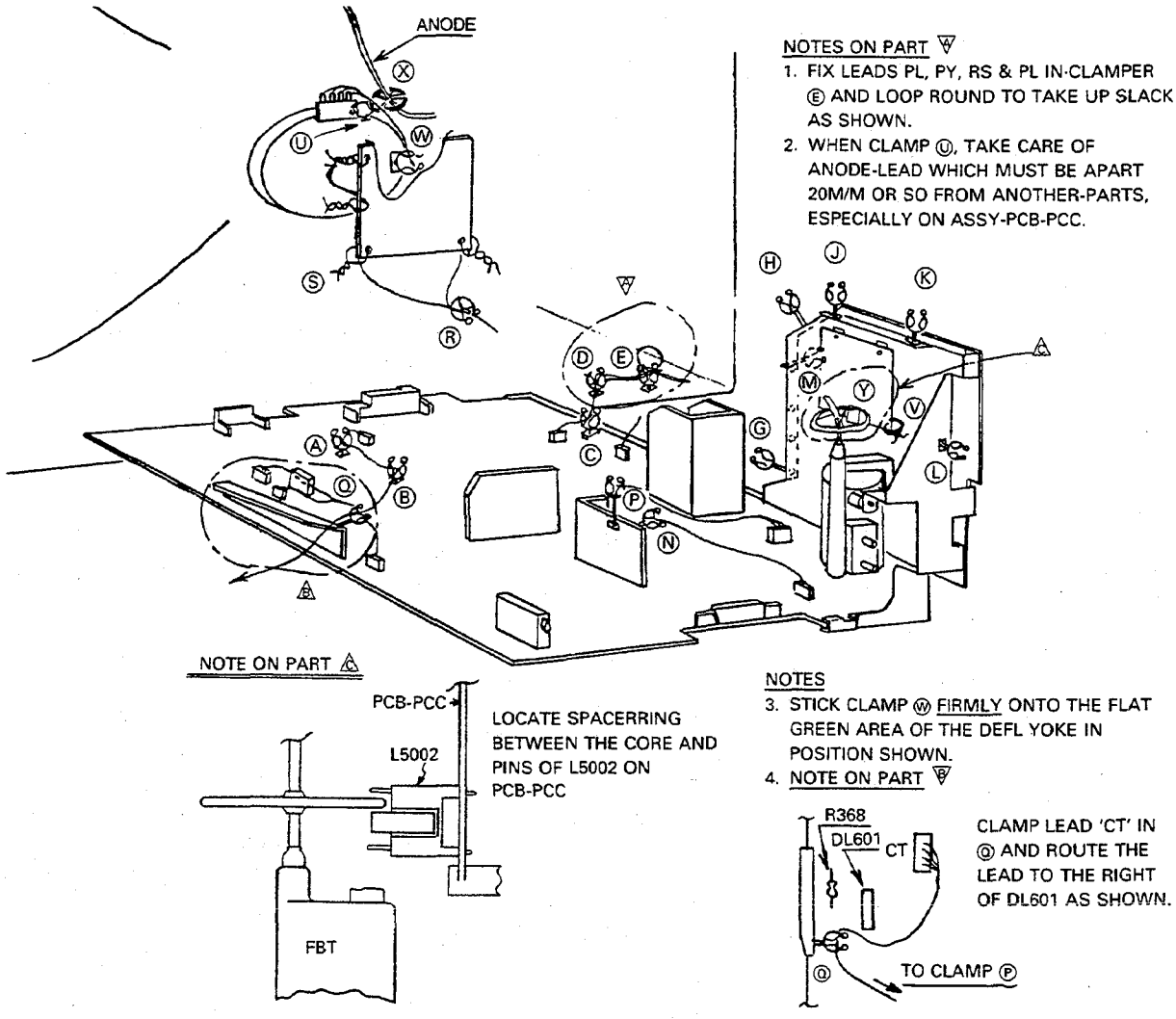

ANODE
NOTES ON PART ▽
1. FIX LEADS PL, PY, RS & PL IN-CLAMPER Ⓔ AND LOOP ROUND TO TAKE UP SLACK AS SHOWN.
2. WHEN CLAMP Ⓤ, TAKE CARE OF ANODE-LEAD WHICH MUST BE APART 20M/M OR SO FROM ANOTHER-PARTS, ESPECIALLY ON ASSY-PCB-PCC.
NOTE ON PART △
PCB-PCC
L5002
LOCATE SPACERRING BETWEEN THE CORE AND PINS OF L5002 ON PCB-PCC
FBT
NOTES
3. STICK CLAMP Ⓦ FIRMLY ONTO THE FLAT GREEN AREA OF THE DEFL YOKE IN POSITION SHOWN.
4. NOTE ON PART ▽
R368
DL601
CT
CLAMP LEAD 'CT' IN Ⓠ AND ROUTE THE LEAD TO THE RIGHT OF DL601 AS SHOWN.
TO CLAMP Ⓟ

Fig. 2 Lead Dressing

CLAMPER LIST FOR CONNECTOR LEAD

CONNECTOR LEAD	CLAMPER MARK
ANODE LEAD	X-Y
FOCUS LEAD	N
SCREEN LEAD	N
CT	R-P-Q
DY	W-R-P
EB	B-C-G-H-J
ED	B-C-G-H-J
EF	R-J-K-V-P-N
HX	B-C-G-H-J-K
PA	C-E
PB	A-B-C-D
PC	J-K-L
PD	Q-B-C-D
PL	E-G-H-J-K-L
PS	R-N
PY	E
PZ	M
RH	E
RS	E
SA	S (2 LAYER CLAMP)
XG	Q

CONNECTOR LEAD FOR CLAMPER LIST

MARK	LEAD TO BE CLAMPED
A	PB
B	PD, PB, HX, ED, EB
C	PD, PB, PA, HX, ED, EB
D	PD, PB
E	RH, RS, PL, PY, PA
G	PL, HX, ED, EB
H	PL, HX, ED, EB
J	PL, PC, ED, HX, EB, EF
K	PL, PC, HX, EF
L	PL, PC
M	PZ
N	PS, EF, FOCUS, SCREEN
P	DY, CT, EF
Q	CT, PD, XG
R	DY, PS, CT, EF
S	SA (2 LAYER CLAMP)
U	CLAMP MARK ⊗
V	EF
W	DY
X	ANODE
Y	ANODE

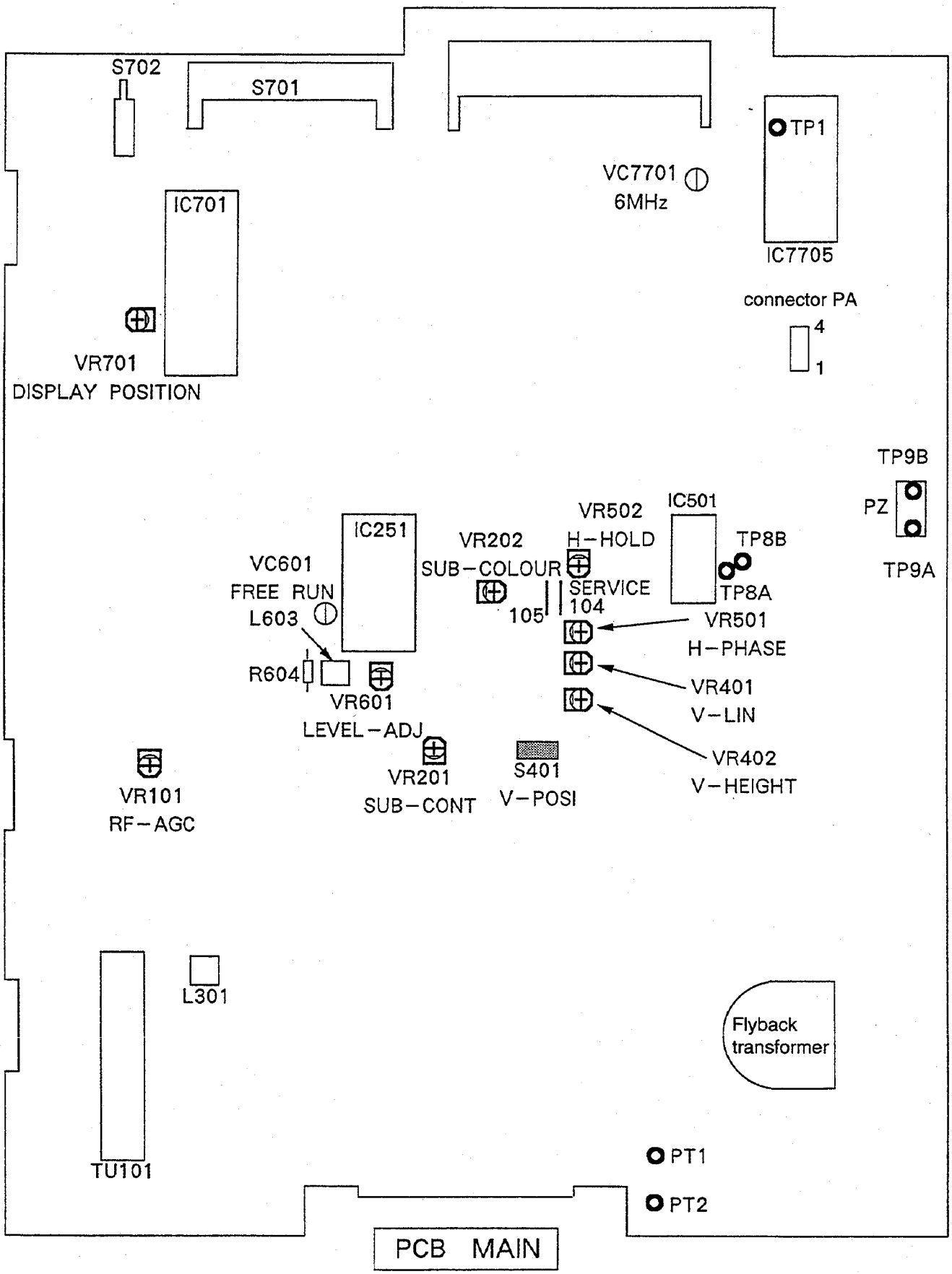


Fig. 3(a). Location of Controls on PCB

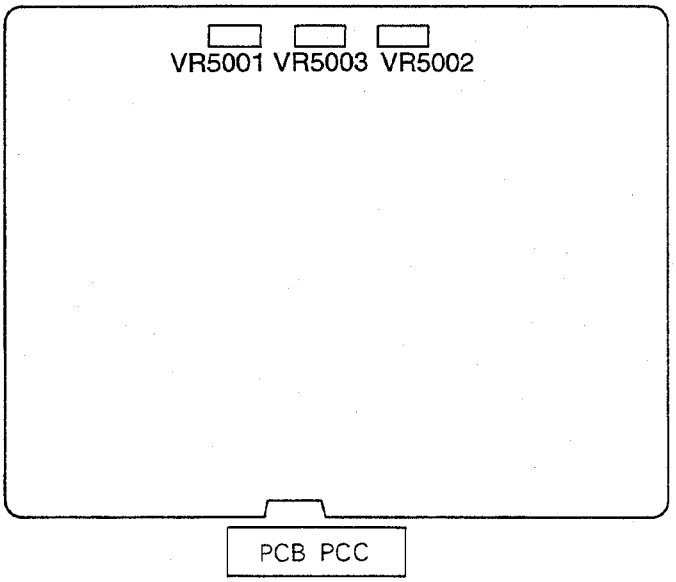


Fig. 3(b). Location of Controls on PCB

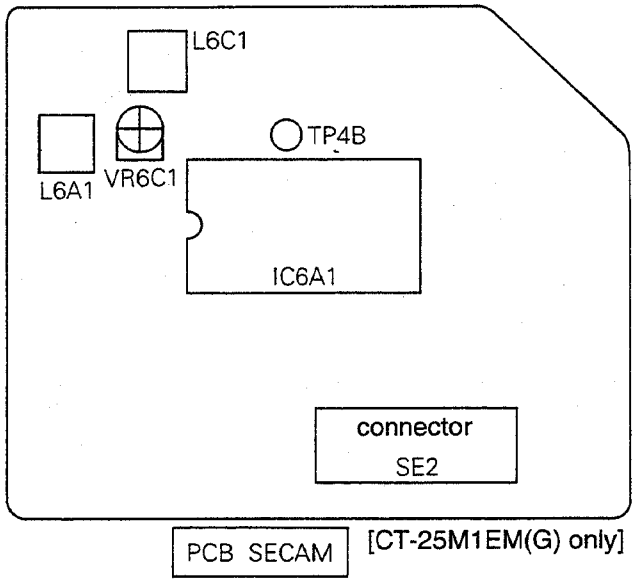


Fig. 3(c). Location of Controls on PCB

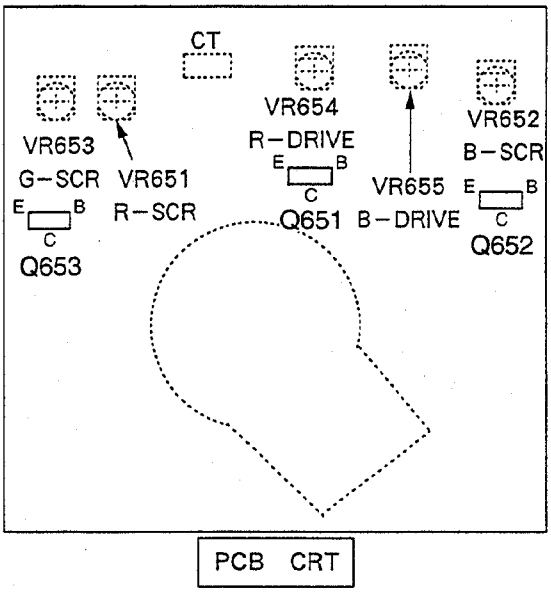


Fig. 3(d). Location of Controls on PCB

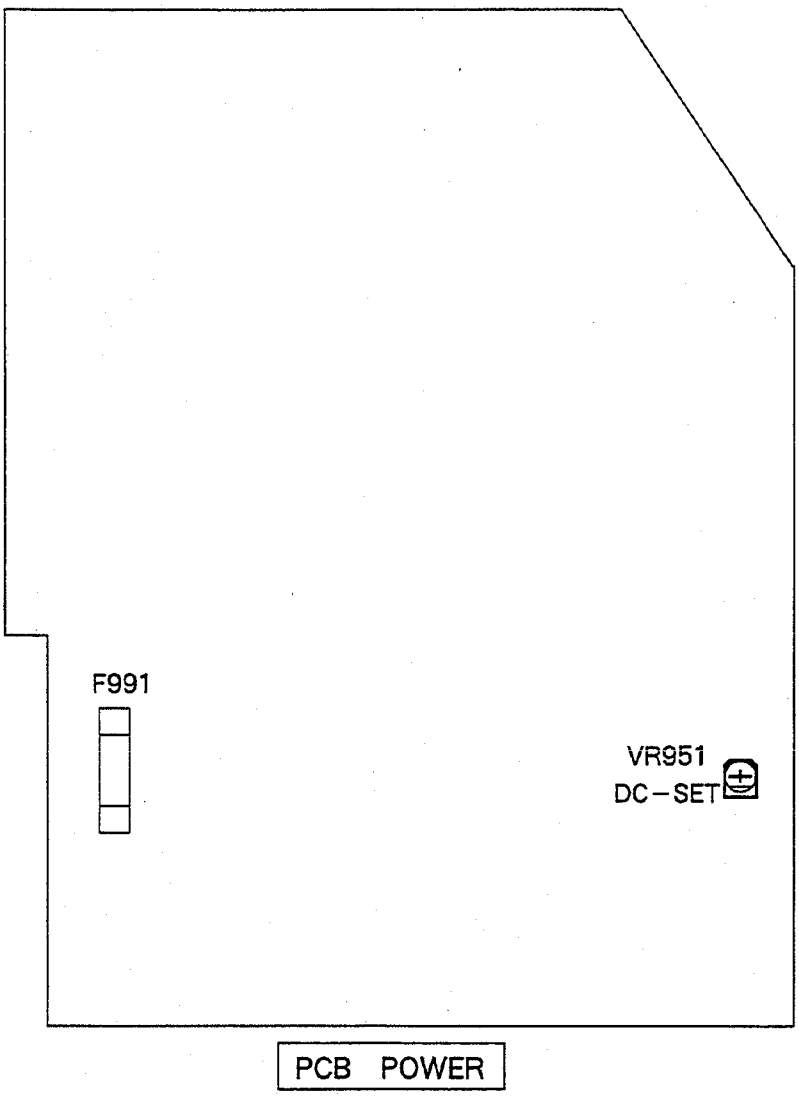
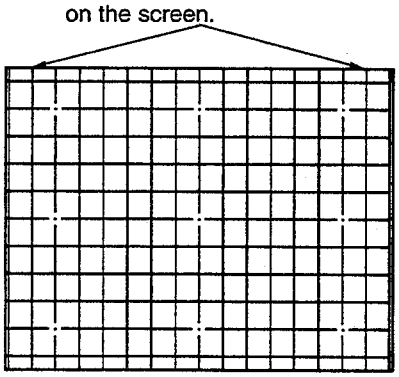
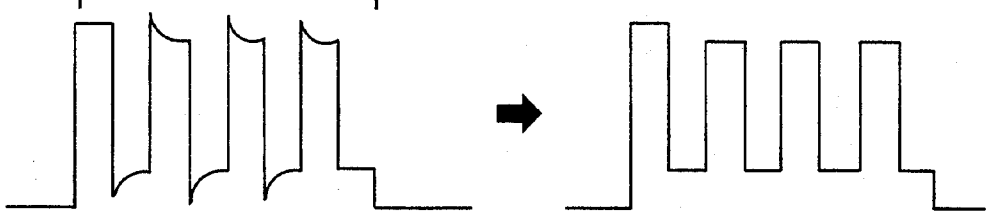
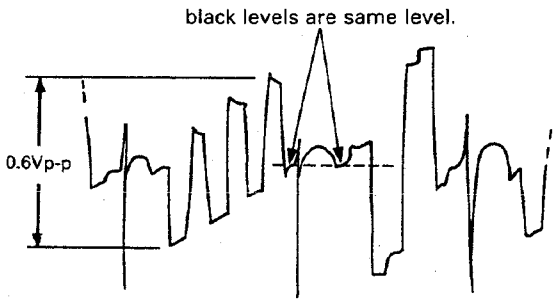


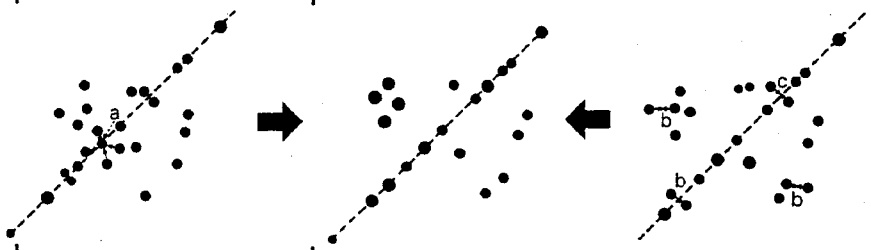
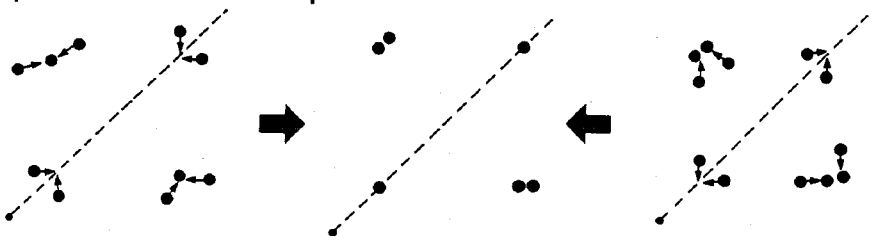
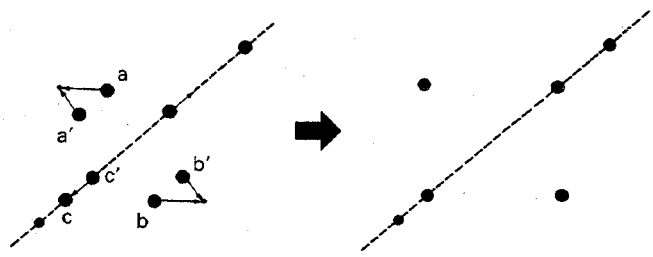
Fig. 3(e). Location of Controls on PCB

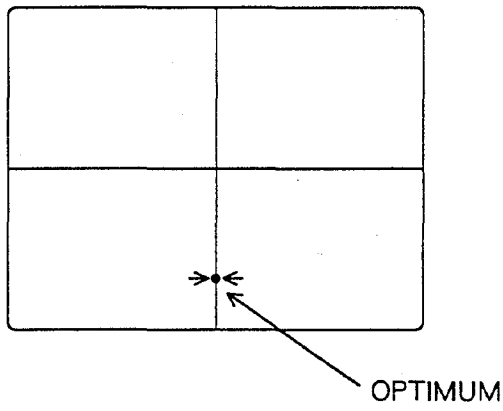
No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
		VIF/SIF Circuit	
1	SIF	• L301 (PCB MAIN)	1. Supply a RF signal (PAL-Programme). 2. Using the VOLUME button, adjust the volume indicator on the screen to the centre of its reading range. 3. Adjust L301 to obtain maximum sound level without buzz.
2	RF AGC	• VR101 (PCB MAIN)	1. Supply a RF signal (PAL-Programme). 2. Turn AFT on. 3. Adjust VR101 (RF-AGC) so that the picture and voice has no beat, noise and inter-modulation distortion.
		Deflection Circuit	
3	Horizontal Oscillation	• VR502 (PCB MAIN)	1. Supply a RF signal (PAL-Programme) 2. Short-circuit TP8A and TP8B. 3. Adjust VR502 (H-HOLD) for near synchronization.
4	Horizontal Centre	• VR501 (PCB MAIN)	1. Connect a VCR and play back an alignment tape (PAL-Monoscope). 2. Adjust VR501 (H-PHASE) so that the readings of left and right markers are the same.

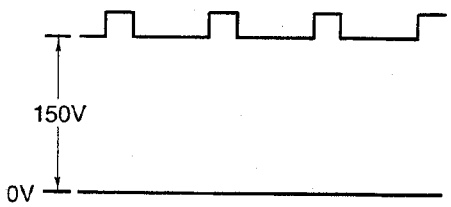
No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
5	PCC (E/W)	• VR5002 (PCB PCC) • VR5003 (PCB PCC)	1. Supply an EXT signal (PAL Crosshatch). 2. Press "OPTIMUM" button on the remote hand unit. 3. Observing the second line from both ends on the screen, adjust VR5003 (PCC PHASE) so that the upper and lower distortions are symmetrical. 4. Adjust VR5002 (PCC AMP) so that the both vertical lines are straight. 5. Repeat step 1 to 5 above, if necessary. The second line from both ends on the screen. 
6	Horizontal Width	• VR5001 (PCB PCC)	1. Connect a VCR and play back an alignment tape (PAL Monoscope). 2. Press "OPTIMUM" button on the remote hand unit. 3. Adjust VR5001 (H-WIDTH) so that the both horizontal width are appropriately.
7	Height and Linearity	• VR401 (PCB MAIN) • VR402 (PCB MAIN)	1. Supply a RF signal (PAL-Programme). 2. Push "OPTIMUM" button on the remote hand unit. 3. Adjust VR402 (V-HEIGHT) for approx 90% vertical size of the raster. 4. Adjust VR401 (V-LIN) for symmetry of vertical linearity. 5. Adjust VR402 (V-HEIGHT) so that the normal vertical size. 6. Repeat steps above, if necessary.
8	Vertical Centre Position	• S401 (PCB MAIN)	1. Supply an EXT signal (PAL-Centre cross) 2. Set S401 (V-POS) so that the optimum raster position.

No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
		Video Circuit	
		* Perform the following adjustment after adjusting the VIF/SIF Circuit and Deflection Circuit adjustments. * Turn on power 20 minutes and more before this adjustment for complete warm up.	
9	SUB CONT	• DC ammeter's (+) lead to PT1 (PCB MAIN) and (–) lead to PT2 (PCB MAIN) • SCREEN control (Flyback Transformer) • VR201 (PCB MAIN)	1. Supply a EXT SIGNAL (PAL-Colour bar). 2. Push "OPTIMUM" button on the remote hand unit. 3. Set COLOUR control to minumum position. 4. Make sure that the former blue bar area does not brighten. 5. Turn the former red bar area a little brighter without brightening the former blue bar area with the SCREEN control. 6. Adjust VR201 (SUB-CONT) so that the beam current is 650 ± 20μA.
		Chroma Circuit	
		* Perform the following adjustment after adjusting the Video Circuit.	
10	Free Run Frequency [CT-25M1EM(G) only]	• VC601 (PCB MAIN)	1. Supply an EXT signal (PAL-Colour bar). 2. Short-circuit connector SE 2 pin ⑨ and pin ⑩. 3. Connect IC251 pin ⑥ to connector PA pin ② (+12V) via a 390Ω resistor. 4. Adjust VC601 (FREE RUN) for almost colour synchronization. 5. Remove the short-lead.
	Freen Run Frequency [CT-25M1EPM/ CT-25M1ETM/ CT-25M1EPT only]	• VC601 (PCB MAIN)	1. Supply an EXT signal (Colour bar). 2. Short-circuit IC251 pin ① and pin ⑥. 3. Short-circuit the resistor R604 (Short-lead length should not exceed 2cm (13/16")). 4. Adjust VC601 (FREE RUN) for almost colour synchronization. 5. Remove the short-lead.

No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
11	SECAM Bell Filter [CT-25M1EM(G) only]	• Oscilloscope to connector CT pin 3 (PCB CRT) • L6A1 (PCB SECAM)	1. Supply a RF signal (SECAM-Colour bar). 2. Adjust L6A1 so that peaking of colour transitions are minimum. 
12	SECAM Inditification and Demodulator [CT-25M1EM(G) only]	• Oscilloscope to TP4B (PCB SECAM) • VR6C1 (PCB SECAM) • L6C1 (PCB SECAM)	1. Supply a RF signal (SECAM-Colour bar). 2. Adjust VR6C1 so that the B-Y waveform is 0.6Vp-p. 3. Adjust L6C1 so that black levels between B-Y and R-Y waveforms are the same level. 4. Supply a RF signal (SECAM-Gray scale signal). 5. Check a gray scale signal has no colour. If some colour is noticeable, change a RF signal to SECAM-Colour bar. 6. Adjust VR6C1, if the colour is too red increase the amplitude of B-Y waveform. If the colour is too green reduce the amplitude of the B-Y waveform. 7. Adjust L6C1 as step 3. 8. Repeat steps 5 and 6 until the adjustment is satisfactory. 

No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
13	Vector	• Oscilloscope's CH-1 to connector CT pin ③ (PCB CRT) • Oscilloscope's CH-2 to connector CT pin ⑤ (PCB CRT) • Oscilloscope to X-Y mode • VR601 (PCB MAIN) • L603 (PCB MAIN)	1. Supply a RF signal (PAL-G card). 2. Turn AFT on. 3. Push "OPTIMUM" button on the remote hand unit. 4. Adjust VR601 (LEVEL ADJ) so that the right points shall gather to point "a" shown in figure. 5. Adjust L603 so that the outward double dots and the bright point at the point "b" shown in figure.  6. Supply a RF signal (SECAM-Colour bar).[CT-25M1EM(G) only] 7. Adjust VR601 for correct alignment as shown in Figure. [CT-25M1EM(G) only] 
14	Colour Output	• Oscilloscope's CH-1 to connector CT pin ③ (PCB CRT) • Oscilloscope's CH-2 to connector CT pin ⑤ (PCB CRT) • Oscilloscope to X-Y mode • VR202 (PCB MAIN)	* Perform the adjustment after adjusting the Free Run and Vector adjustments. 1. Supply an EXT signal (PAL-Colour bar). 2. Turn AFT on. 3. Adjust VR202 (SUB COLOR) so that the a and a', b and b' and c and c' shall meet alternately. 

No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
		Micro Computer Circuit	
* Perform the following adjustment after adjusting the Horizontal Centre adjustment.			
15	Display Position	• VR701 (PCB MAIN)	1. Supply an EXT signal (PAL-Centre cross). 2. Push "OPTIMUM" button on the remote hand unit. 3. Adjust VR701 (CHARA) so that the optimum display shall be in the middle of the horizontal width of the raster. 
16	Teletext Free Run Frequency (6MHz) [CT-25M1EPT/CT-25M1ETM only]	• Frequency counter to TP1 (PCB MAIN) • VC7701 (PCB MAIN)	1. Turn on power 5 minutes and more before this adjustment for complete warm up. 2. Set the no signal condition in the RF mode. 3. Adjust VC7701 so that the frequency is 6000.2±0.2kHz.

No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
		CRT Circuit	
		* Perform the adjustment after adjusting the PURITY AND CONVERGENCE adjustments. * Turn on power 20 minutes and more before this adjustment for complete warm up.	
17	Cut Off	• Oscilloscope to Q651 (Collector) • VR651 (PCB CRT)	1. Set the no signal condition in the AV mode. 2. Set the following variable resistors to the specified positions. **DRIVE control VR654 (PCB CRT) and VR655 (PCB CRT):** At about 45° counter clockwise position from the centre as seen from copper side. **SUB-CONT control VR201 (PCB MAIN):** At about 45° counter clockwise position from the centre as seen from copper side. **SCREEN control (Flyback Transformer):** Fully counter clockwise position. 3. Adjust VR651 so that the pedestal level is 150V. 
		• Oscilloscope to Q652 (Collector) • VR652 (PCB CRT)	4. Adjust VR652 so that the pedestal level is 150V.
		• Oscilloscope to Q653 (Collector) • VR653 (PCB CRT)	5. Adjust VR653 so that the pedestal level is 150V. 6. Short-circuit service terminals 104 and 105 on the MAIN PCB. There should be a single horizontal line. 7. Adjust SCREEN control so that one of red, green and blue begins to appear. 8. Adjust two of VR651, VR652 and VR653 so that the two colours become equally bright. 9. Open circuit service terminals 104 and 105 on the MAIN PCB.
18	White Level	• VR654 (PCB MAIN) • VR655 (PCB MAIN)	10. Supply an EXT signal (PAL-White). 11. Adjust VR 654 and VR655 so that entire screen is in pure white. 12. Repeat the above steps for best Cut off and White level.
19	FOCUS	• FOCUS control (Flyback transformer)	13. Supply a RF signal (PAL-Programme). 14. Adjust FOCUS control for the best overall focus.

No.	ITEM	ADJ.METHOD	ADJUSTMENT PROCEDURE
		Power Circuit	
20	B4 Voltage	• DC voltmeter's (+) lead to TP9A (PCB MAIN) and (–) lead to TP9B (PCB MAIN) • VR951 (PCB POWER)	1. Connect a VCR and play back an alignment tape (PAL Monoscope). 2. Push "OPTIMUM" button on the remote hand unit. 3. Adjust VR951 (DC-SET) so that the voltage is 152±3V.

PARTS LIST

MODEL : CT – 25M1EM (G) /CT – 25M1EPM
CT – 25M1EPT /CT – 25M1ETM

In order to expedite delivery of replacement part orders.

Specify : 1. Model number/Serial number
2. Part number and Description
3. Quantity

Unless full information is supplied, delay in execution of orders will result.

⚠ : Critical components ○ : New Parts

MARK	B	C	D	F	G	J	K
TOLERANCE (%)	± 0.1	± 0.25	± 0.5	± 1	± 2	± 5	± 10

MARK	M	N	V	X	Z	P	Q
TOLERANCE (%)	± 20	± 30	+ 10 – 10	+ 40 – 20	+ 80 – 20	+ 100 – 0	+ 30 – 10

MARK	B	C	D	F	G
TOLERANCE (pF)	± 0.1	± 0.25	± 0.5	± 1	± 2

ABBREVIATION

[EMG] : CT – 25M1EM (G)
[EPM] : CT – 25M1EPM
[EPT] : CT – 25M1EPT
[ETM] : CT – 25M1ETM

[EMG] : CT − 25M1EM (G)　[EPM] : CT − 25M1EPM
[EPT] : CT − 25M1EPT　[ETM] : CT − 25M1ETM

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
D 719	264P370010	DIODE	1N4148	
D 721	264P464080	DIODE	EQA02-11C, D	
D 722	264P464080	DIODE	EQA02-11C, D	
D 723	264P464080	DIODE	EQA02-11C, D	
D 724	264P464080	DIODE	EQA02-11C, D	
D 726	264P370010	DIODE	1N4148	[EPT, ETM]
D 727	264P370010	DIODE	1N4148	
D 728	264P370010	DIODE	1N4148	
D 729	264P370010	DIODE	1N4148	
D 731	264P370010	DIODE	1N4148	
D 732	264P370010	DIODE	1N4148	
D 733	264P370010	DIODE	1N4148	
D 734	264P370010	DIODE	1N4148	
D 736	264P370010	DIODE	1N4148	
D 739	264P370010	DIODE	1N4148	
D 740	264P370010	DIODE	1N4148	
D 7A1	264P393010	LIGHT EMITTING DIODE	SLC-26VR5F	
D 7701	264P370010	DIODE	1N4148	[EPT, ETM]
D 7702	264P370010	DIODE	1N4148	[EPT, ETM]
D 7703	264P370010	DIODE	1N4148	[EPT, ETM]
D 7705	264P370010	DIODE	1N4148	[EPT, ETM]
D 7706	264P370010	DIODE	1N4148	[EPT, ETM]
D 7707	264P483080	DIODE	RD5.1FB2	[EPT, ETM]
D 7708	264P370010	DIODE	1N4148	[EPT, ETM]
D 901	264P376010	DIODE	BYW56	
D 902	264P376010	DIODE	BYW56	
D 903	264P376010	DIODE	BYW56	
D 904	264P376010	DIODE	BYW56	
D 905	264P371010	DIODE	BYD33G	
D 906	264P372010	DIODE	BYV96E	
D 907	264P481060	DIODE	RD3.0FB2	
D 908	264P370010	DIODE	1N4148	
D 909	264P481060	DIODE	RD3.0FB2	
D 950	264P378010	DIODE	BYW96E	
D 952	264P377010	DIODE	BYW95B	
D 953	264P377010	DIODE	BYW95B	[EPT, ETM]
D 954	264P374020	DIODE	1N4003ID	
D 955	264P491090	DIODE	RD30FB3	
D 956	264P377010	DIODE	BYW95B	
D 958	264P370010	DIODE	1N4148	
D 959	264P370010	DIODE	1N4148	
D 960	264P370010	DIODE	1N4148	[EPT, ETM]
D 961	264P461080	DIODE	EQA02-06E/RD6.2EB3	
		OTHER SEMICONDUCTORS		
RP901	265P071050	POSITIVE THERMISTOR	PTH451C41BG180N	
		FILTERS		
CF101	296P024030	CERAMIC FILTER	TPS5.5MB	
CF301	296P014020	CERAMIC FILTER	SFE-5.5MA	
CF701	299P046010	CERAMIC RESONATOR		
SF101	296P034050	SAW FILTER	KAF-38.9MR-MN1	[EMG, EPM, EPT]
SF101	296P034040	SAW FILTER		[ETM]

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
		DELAY LINES		
DL251	337P114020	DELAY LINE		
DL601	337P027020	DELAY LINE		
DL6A1	337P111030	DELAY LINE		[EMG]
		COILS		
⚠	409B041050	DEGAUSSING COIL		
L 101	321C041050	RF COIL	JISC-3212-0.4	
L 103	325C106030	PEAKING COIL	10μH-J	
L 105	323P175010	VIF COIL	LLD-TANK(38.9 39.5MHz)	
L 106	323P175090	VIF COIL	AFT(38.9 39.5MHz)	
L 108	321C030050	RF COIL	2.2μH-K	
L 109	325C111070	PEAKING COIL	22μH-K	
L 111	321C031090	RF COIL	33μH-K	[EPM, EPT, ETM]
L 251	325C121030	PEAKING COIL	10μH-K	
L 2A1	325C101040	PEAKING COIL	12μH-K	[EMG]
L 301	327P074010	SIF COIL	5.5/6.0MHz	
L 304	321C031060	RF COIL	15μH-K	
L 551	321C030010	RF COIL	1μH-K	
L 553	411D009020	FERRITE CORE FILTER		
L 5000	333P012030	H-LIN. COIL		
L 5001	409P408010	PCC COIL		
L 5002	409P407010	BRIDGE COIL		
L 602	325C166020	PEAKING COIL	8.2μH-J	
L 603	349P169010	DL OUT COIL	DL-MATCH-4.43	
L 6A1	349P172010	BELL FILTER		[EMG]
L 6B1	325C121030	PEAKING COIL	10μH-K	[EMG]
L 6C1	349P173010	DEMODULATOR COIL		[EMG]
L 6C2	325C122010	PEAKING COIL	47μH-K	[EMG]
L 701	325C122010	PEAKING COIL	47μH-K	
L 702	325C122010	PEAKING COIL	47μH-K	
L 703	325C122010	PEAKING COIL	47μH-K	
L 704	325C122010	PEAKING COIL	47μH-K	
L 705	325C121030	PEAKING COIL	10μH-K	
L 710	325C120010	PEAKING COIL	1μH-M	
L 7701	321C031060	RF COIL	15μH-K	[EPT, ETM]
L 7710	325C120010	PEAKING COIL	1μH-M	[EPT, ETM]
L 7711	325C121030	PEAKING COIL	10μH-K	[EPT, ETM]
L 901	411P001070	FERRITE LEAD		
L 903	411P001070	FERRITE LEAD		
L 904	321C030050	RF COIL	2.2μH-K	
L 951	325D059060	PEAKING COIL	390μH-K	
L 953	325C121010	PEAKING COIL	6.8μH-K	
L 991	351P011020	LINE FILTER		
L 994	351P047020	LINE FILTER		
		TRANSFORMERS		
LC601	349P159050	CHROMA-BP		
T 101	323P174030	VIF		[EMG, EPM, EPT]
T 101	323P174010	VIF	38MHz	[ETM]
T 551	336P009010	H.DRIVE		
⚠ T 553	334P179020	FLYBACK		
⚠ T 901	350P453030	POWER		

[EMG] : CT – 25M1EM (G)　[EPM] : CT – 25M1EPM
[EPT] : CT – 25M1EPT　[ETM] : CT – 25M1ETM

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
		TUBES		
⚠ V 271	255P914010	CATHODE RAY TUBE	A59EAK01X1	
		INTEGRATED CIRCUITS		
IC101	272P150010	IC	M51496P	
IC150	266P192010	IC	LA7910	
IC251	272P148010	IC	TDA3561A	
IC2A2	266P064010	IC	M51320P	
IC361	266P512010	IC	AN5265	
IC401	272P174010	IC	μPC 1498H	
IC501	272P147020	IC	TDA2579A	
IC5001	272P406010	IC	TEA2031A	
IC6A1	272P227010	IC	TDAB590A	[EMG]
IC701	272P090030	IC	M50439-563SP	
IC702	272P064010	IC	M58630P	
IC703	266P130030	IC	PST520E	
IC704	266P010020	IC	μPC574J-K	
IC7704	263P141010	IC	PCF84C81/39 CNT	[EPT]
IC7704	272P193010	IC	MAB8461P	[ETM]
IC7705	272P096020	IC	SAA5231	[EPT, ETM]
IC7706	272P095050	IC	SAA5243	[EPT, ETM]
IC7707	263P622020	IC	HM6264ALSP10	[EPT, ETM]
IC7708	263P578010	IC	85C72	[EPT, ETM]
IC901	272P514010	IC	TEA2261	
IC951	266P922010	IC	μPC78M05H	[EPT, ETM]
IC952	266P922010	IC	μPC78M05H	
IC953	267P076010	IC	SI-3120C	
		TRANSISTORS		
Q 104	260P543050	TRANSISTOR	JC501-Q	
Q 105	260P543050	TRANSISTOR	JC501-Q	
Q 106	260P544030	TRANSISTOR	JA101-Q	[ETM]
Q 202	260P543050	TRANSISTOR	JC501-Q	
Q 210	260P543050	TRANSISTOR	JC501-Q	[EPT, ETM]
Q 211	260P543050	TRANSISTOR	JC501-Q	[EPT, ETM]
Q 2A2	260P543050	TRANSISTOR	JC501-Q	
Q 2A4	260P543050	TRANSISTOR	JC501-Q	
Q 2B1	260P544030	TRANSISTOR	JA101-Q	
Q 2B2	260P543050	TRANSISTOR	JC501-Q	
Q 2B3	260P543050	TRANSISTOR	JC501-Q	
Q 2B4	260P543050	TRANSISTOR	JC501-Q	
Q 2B5	260P543050	TRANSISTOR	JC501-Q	
Q 301	260P543050	TRANSISTOR	JC501-Q	
Q 302	260P543050	TRANSISTOR	JC501-Q	
Q 401	260P544030	TRANSISTOR	JA101-Q	
Q 402	260P544030	TRANSISTOR	JA101-Q	
Q 551	260P422010	TRANSISTOR	2SC2482	
Q 552	260P607010	TRANSISTOR	2SD1878	
Q 5000	260P543050	TRANSISTOR	JC501-Q	
Q 651	260P425040	TRANSISTOR	2SC2688-M, N	
Q 652	260P425040	TRANSISTOR	2SC2688-M, N	
Q 653	260P425040	TRANSISTOR	2SC2688-M, N	
Q 654	260P544030	TRANSISTOR	JA101-Q	
Q 6A1	260P543050	TRANSISTOR	JC501-Q	[EMG]
Q 6A2	260P544030	TRANSISTOR	JA101-Q	[EMG]
Q 6B1	260P543050	TRANSISTOR	JC501-Q	[EMG]
Q 6C1	260P543050	TRANSISTOR	JC501-Q	[EMG]
Q 701	260P559060	TRANSISTOR	2SC1740S-S, E	
Q 702	260P543050	TRANSISTOR	JC501-Q	
Q 704	260P543050	TRANSISTOR	JC501-Q	
Q 7701	260P543050	TRANSISTOR	JC501-Q	[EPT, ETM]
Q 7702	260P543050	TRANSISTOR	JC501-Q	[EPT, ETM]
Q 7703	260P543050	TRANSISTOR	JC501-Q	[EPT, ETM]
Q 7705	260P543050	TRANSISTOR	JC501-Q	[EPT, ETM]
Q 7706	260P543050	TRANSISTOR	JC501-Q	[EPT, ETM]
Q 901	260P663010	TRANSISTOR	2SD1887	
Q 902	260P543050	TRANSISTOR	JC501-Q	
Q 950	260P255040	TRANSISTOR	2SA950-Y	[EPT, ETM]
Q 951	260P543050	TRANSISTOR	JC501-Q	
Q 952	260P255040	TRANSISTOR	2SA950-Y	
Q 953	260P543050	TRANSISTOR	JC501-Q	
		DIODES		
D 105	264P463050	DIODE	EQA02-09C, D	
D 154	264P370010	DIODE	1N4148	
D 201	264P370010	DIODE	1N4148	
D 202	264P370010	DIODE	1N4148	
D 204	264P370010	DIODE	1N4148	
D 251	264P488020	DIODE	RD13ED1	
D 252	264P488020	DIODE	RD13ED1	
D 253	264P488020	DIODE	RD13ED1	
D 254	264P370010	DIODE	1N4148	
D 2A1	264P483080	DIODE	RD5.1FB2	
D 2A2	264P370010	DIODE	1N4148	
D 2B1	264P370010	DIODE	1N4148	
D 361	264P370010	DIODE	1N4148	
D 362	264P464080	DIODE	EQA02-11C, D	
D 401	264P374020	DIODE	1N4003ID	
D 403	264P370010	DIODE	1N4148	
D 411	264P370010	DIODE	1N4148	
D 501	264P370010	DIODE	1N4148	
D 502	264P370010	DIODE	1N4148	
D 551	264P375020	DIODE	BY228	
D 552	264P378010	DIODE	BYW96E	
D 553	264P377010	DIODE	BYW95B	
D 554	264P371010	DIODE	BYD33G	
D 555	264P374020	DIODE	1N4003ID	
D 559	264P370010	DIODE	1N4148	
D 560	264P370010	DIODE	1N4148	
D 5000	264P370010	DIODE	1N4148	
D 6C1	264P370010	DIODE	1N4148	[EMG]
D 701	264P370010	DIODE	1N4148	[EMG, EPM, EPT]
D 702	264P370010	DIODE	1N4148	[EMG, EPM, EPT]
D 709	264P370010	DIODE	1N4148	
D 710	264P370010	DIODE	1N4148	
D 712	264P370010	DIODE	1N4148	
D 717	264P370010	DIODE	1N4148	
D 718	264P370010	DIODE	1N4148	[EMG, EPM]

[EMG] : CT – 25M1EM (G) [EPM] : CT – 25M1EPM
[EPT] : CT – 25M1EPT [ETM] : CT – 25M1ETM

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
		VARIABLE RESISTORS		
VR101	127C080050	VR-SEMIFIXED	1/5W B2KΩ-M	
VR201	127C081020	VR-SEMIFIXED	1/5W B100KΩ-M	
VR202	127C081020	VR-SEMIFIXED	1/5W B100KΩ-M	
VR401	127C081030	VR-SEMIFIXED	1/10W B200KΩ-N	
VR402	127C081030	VR-SEMIFIXED	1/10W B200KΩ-N	
VR501	127C081010	VR-SEMIFIXED	1/5W B50KΩ-M	
VR502	127C080080	VR-SEMIFIXED	1/5W B10KΩ-M	
VR5001	127C180080	VR-SEMIFIXED	1/10W B10KΩ-M	
VR5002	127C181040	VR-SEMIFIXED	1/5W B300KΩ-M	
VR5003	127C180070	VR-SEMIFIXED	1/5W B5KΩ-M	
VR601	127C080050	VR-SEMIFIXED	1/5W B2KΩ-M	
VR651	127C020070	VR-SEMIFIXED	1/5W B5KΩ-N	
VR652	127C020070	VR-SEMIFIXED	1/5W B5KΩ-N	
VR653	127C020070	VR-SEMIFIXED	1/5W B5KΩ-N	
VR654	127C020040	VR-SEMIFIXED	1/5W B1KΩ-N	
VR655	127C020040	VR-SEMIFIXED	1/5W B1KΩ-N	
VR6C1	127C080030	VR-SEMIFIXED	1/5W B500Ω-M	[EMG]
VR701	127C080070	VR-SEMIFIXED	1/5W B5KΩ-M	
VR951	127C080080	VR-SEMIFIXED	1/5W B10KΩ-M	
		RESISTORS		
R 257	103P419090	R-CARBON	1/4W 75Ω-J	[ETM]
R 2B5	103P419090	R-CARBON	1/4W 75Ω-J	[ETM]
R 2B6	103P419090	R-CARBON	1/4W 75Ω-J	[ETM]
R 2B7	103P419090	R-CARBON	1/4W 75Ω-J	[ETM]
R 2B8	103P419090	R-CARBON	1/4W 75Ω-J	[ETM]
R 2B9	103P419090	R-CARBON	1/4W 75Ω-J	[ETM]
R 2C1	103P419090	R-CARBON	1/4W 75Ω-J	[ETM]
R 551	109D074030	CEMENT METAL	5W 3.9KΩ-K/J	
R 556	102P082090	CEMENT WIRE	10W 10Ω	
⚠ R 559	103P378040	FUSE	1/4W 2.2Ω-J	
⚠ R 563	103P397090	FUSE	1/2W 0.82Ω-J	
R 5000	103P442020	FUSE METAL	1W 560Ω-K/J	
⚠ R 671	103P448050	FUSE METAL	1W 2.7Ω-K/J	
R 901	102P080040	CEMENT WIRE	5W 4.7Ω	
R 906	109D075050	CEMENT WIRE	10W 820Ω-J	
⚠ R 955	103P397090	FUSE	1/2W 0.82Ω-J	
		CAPACITORS AND TRIMMERS		
C 5001	189P077020	C-M-PLASTIC-PP	400V 0.27M	
C 5002	189P078020	C-M-PLASTIC-PP	200V 0.82M	
C 705	149D811010	CR-MULTIPLE	B50V 1000PF-M	
C 904	185D059030	ELECTROLYTIC-C	H385V/H400V150μF-M	
⚠ C 913	189P091010	CERAMIC CAPACITOR	AC400V E4700P-M	
VC601	202P109030	TRIMMER CAPACITOR	5.5pF-30pF	
VC7701	202P109030	TRIMMER CAPACITOR	5.5pF-30pF	[EPT, ETM]
		SWITCHES		
S 401	434C021010	LEVER SWITCH		
S 701	439C028030	BLOCK SWITCH		
S 702	432C050010	PUSH SWITCH		
S 703	432P082010	KEY BOARD SWITCH		
S 704	432P082010	KEY BOARD SWITCH		
S 705	432P066010	KEY BOARD SWITCH		
⚠ S 991	432P076010	PUSH SWITCH		
		MISCELLANEOUS		
⚠	449C081010	CRT SOCKET		
	480P638050	SPEAKER		
⚠ F 991	283D047040	FUSE	2A-T	
⚠ PC951	268P050010	PHOTO COUPLER	TLP621	
TU101	295P258090	TUNER	TEMD1X028A	[EMG, EPM, EPT]
TU101	295P261080	TUNER	ENV57839F1C	[ETM]
X 601	285P068020	CRYSTAL RESONATOR	8.8MHz	
X 7701	285P062020	CRYSTAL RESONATOR	13.875MHz	[EPT, ETM]
X 7702	285P064020	CRYSTAL RESONATOR	6.000MHz	[EPT, ETM]
X 7703	285P064020	CRYSTAL RESONATOR	6.000MHz	[ETM]
X 7703	285P118010	CRYSTAL RESONATOR		[EPT]
Z 7A1	939P226010	PREAMP UNIT		[EMG, EPM, EPT]
Z 7A1	939P226020	PREAMP UNIT		[ETM]
⚠ Z 950	299P087050	PROTECTOR		
⚠ Z 951	299P087010	PROTECTOR		[EPT, ETM]
⚠ Z 952	299P087060	PROTECTOR		
		PRINTED CIRCUIT BOARD ASSY'S		
⚠	930C552003	CRT PCB ASSY		[EMG, EPM, ETM]
⚠	930C247070	CRT PCB ASSY		[EPT]
⚠	920A388009	MAIN PCB ASSY		[EMG]
⚠	920A388007	MAIN PCB ASSY		[EPM]
⚠	920A370080	MAIN PCB ASSY		[EPT]
⚠	920A388006	MAIN PCB ASSY		[ETM]
⚠	930C372001	PCC PCB ASSY		
⚠	930C415005	POWER PCB ASSY		[EMG, EPM]
⚠	930C415006	POWER PCB ASSY		[EPT]
⚠	930C415007	POWER PCB ASSY		[ETM]
⚠	930C306090	SECAM PCB ASSY		[EMG]
		MECHANICAL PARTS		
	669D220020	SCREW	(10P)	
	669D221040	SCREW	SCREW-TB(10P)	
	669D221060	SCREW	SCREW-TB(10P)	
	669D220030	SCREW	3X10MM	
	669D221070	SCREW		
	669D212010	SCREW	(10P)	
		COSMETIC PARTS		
⚠	246C022030	AC POWER CORD		
⚠	700C125030	BACK COVER		[EMG]
⚠	700C125040	BACK COVER		[EPM]
⚠	700C123080	BACK COVER		[EPT]
⚠	700C132050	BACK COVER		[ETM]
	704C782010	BUTTON POWER		[EMG, EPM, EPT]
	704C375080	BUTTON POWER		[ETM]
	701D081080	CABINET FRONT		[EMG]
	701D081090	CABINET FRONT		[EPM]
	700A570020	CABINET FRONT		[EPT]

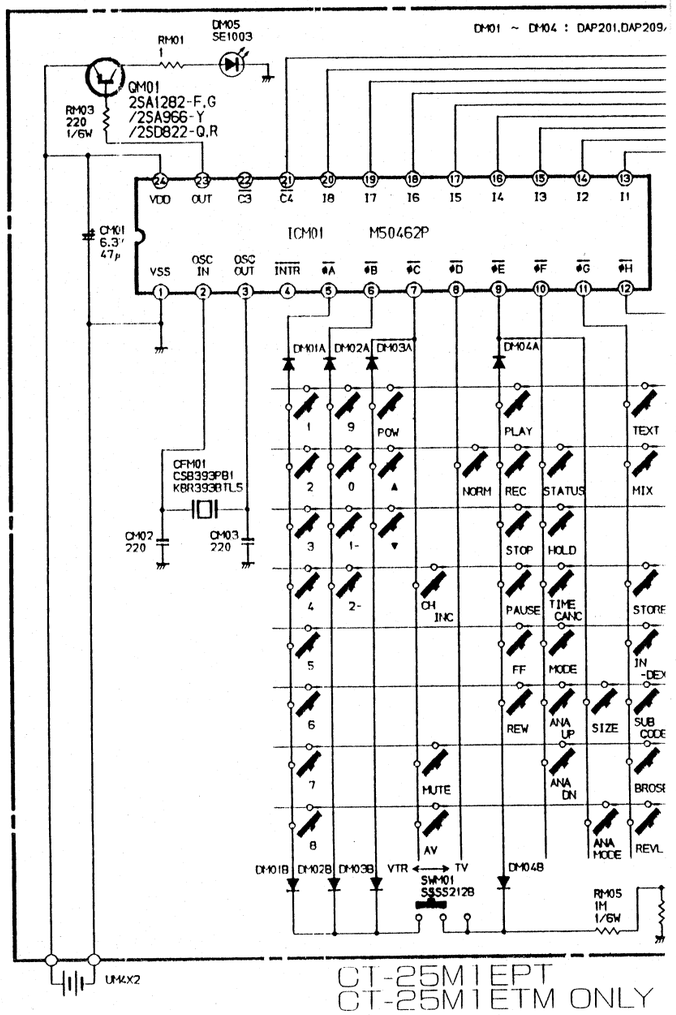
[EMG] : CT – 25M1EM (G)　[EPM] : CT – 25M1EPM
[EPT] : CT – 25M1EPT　[ETM] : CT – 25M1ETM

SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION	
	701D083060	CABINET FRONT		[ETM]
	641D173010	CLIP	(A40R)	
	702C836000	DOOR		
	761C437010	DOOR CATCH		
	704C597010	PUSH KNOB		
	734D310010	PUSH KNOB	21C694	
		PACKING PARTS AND ACCESSORY		
	803A263010	PACKING CUSHION		
⚠	872C026090	INSTRUCTION BOOK		[EMG]
⚠	872C026080	INSTRUCTION BOOK		[EPM]
⚠	872C027000	INSTRUCTION BOOK		[EPT]
⚠	872C027010	INSTRUCTION BOOK		[ETM]
	801C089050	PACKING CASE		[EMG]
	801C089040	PACKING CASE		[EPM]
	801C089060	PACKING CASE		[EPT]
	801C089070	PACKING CASE		[ETM]
	831D222030	PACKING BAG		
	831D262010	PACKING BAG		
	829D138020	PACKING SHEET		
⚠	939P200010	REMOTE HAND UNIT		[EMG, EPM]
⚠	939P212010	REMOTE HAND UNIT		[EPT, ETM]

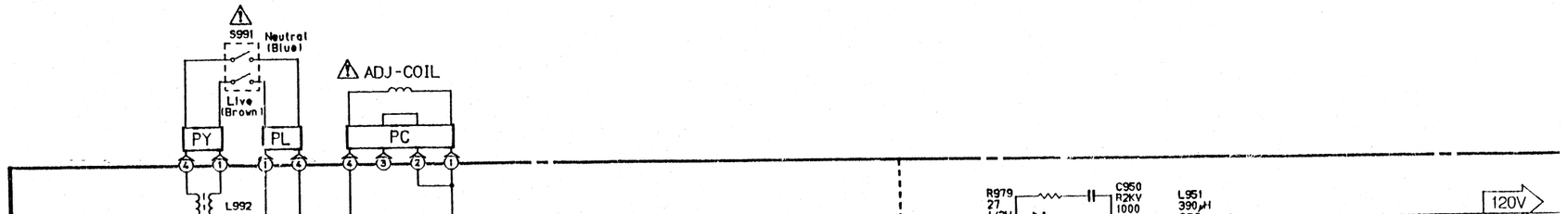
SYMBOL NO.	PARTS NO.	PARTS NAME	DESCRIPTION

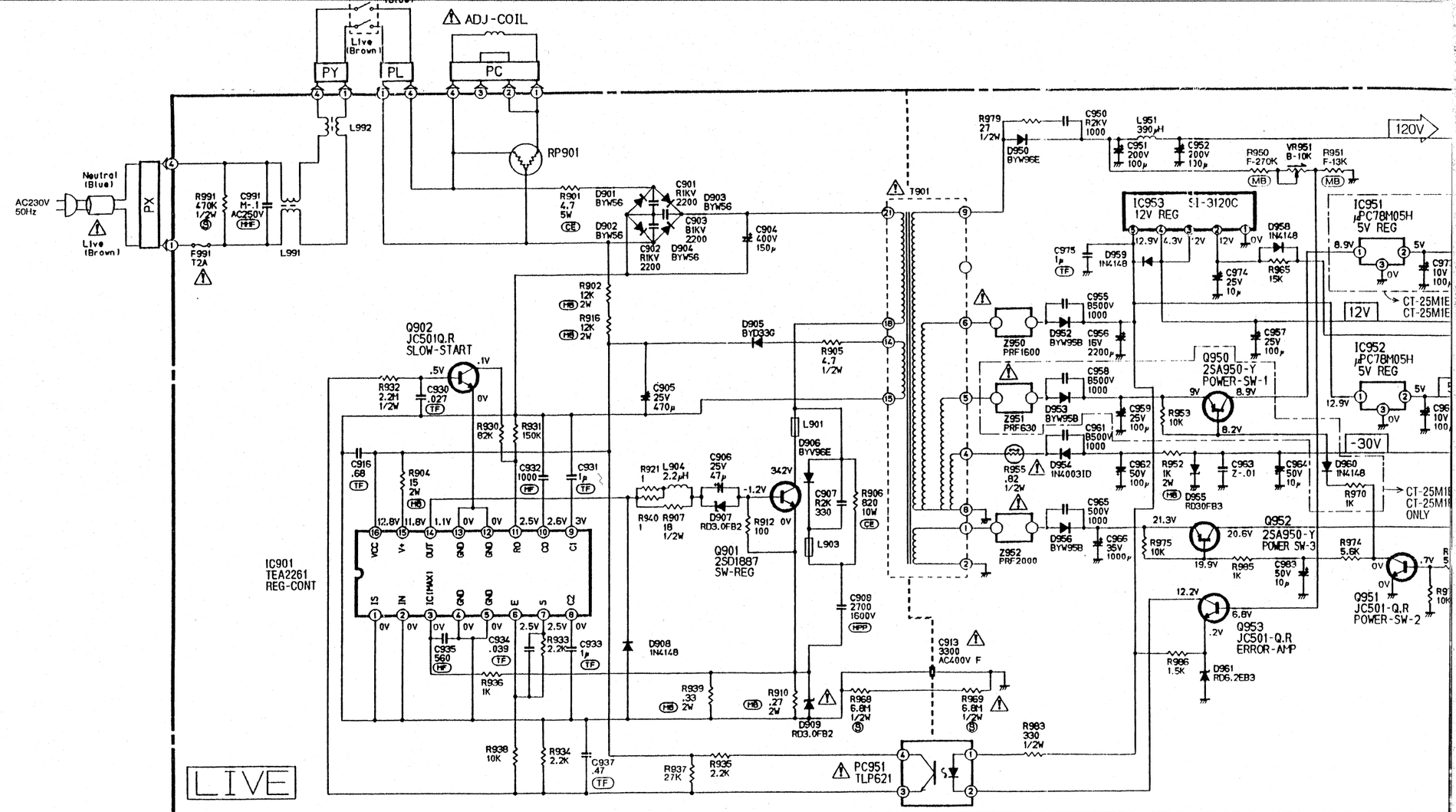
– MEMO–

⚠ TRANSMITTER-REMOCON



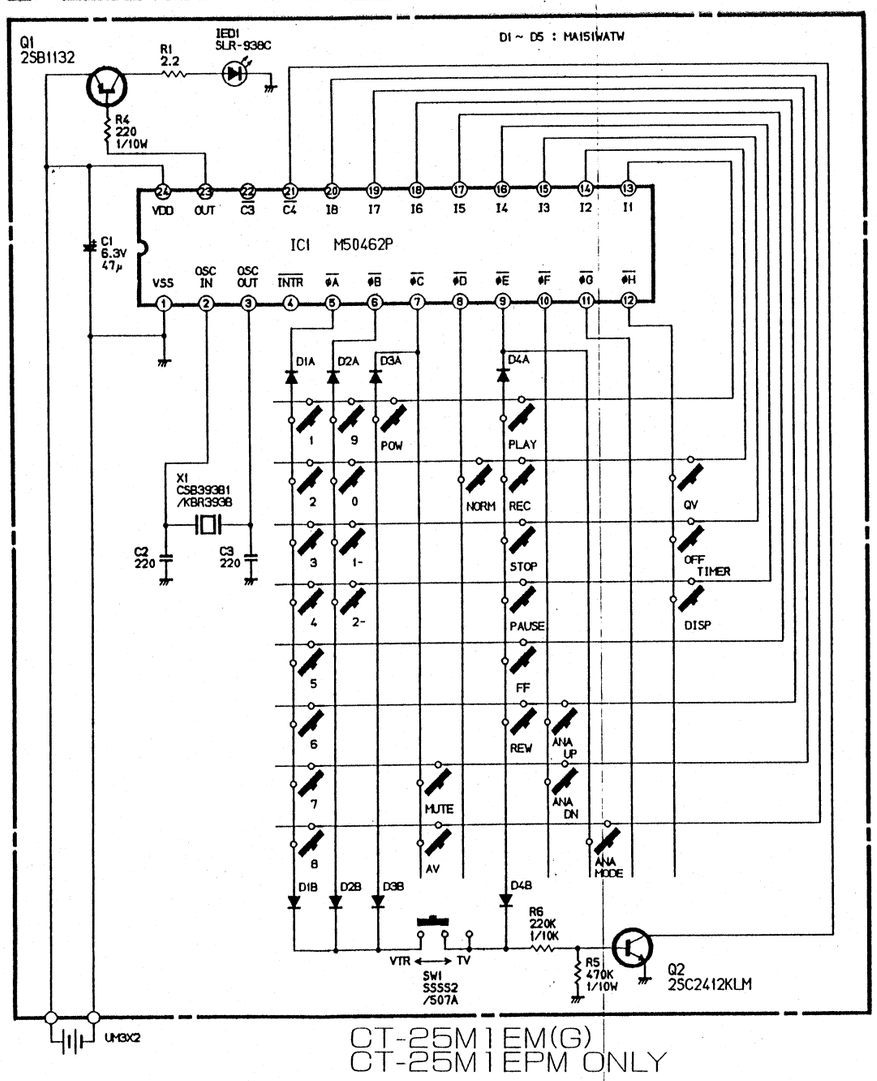
CT-25M1EPT
CT-25M1ETM ONLY



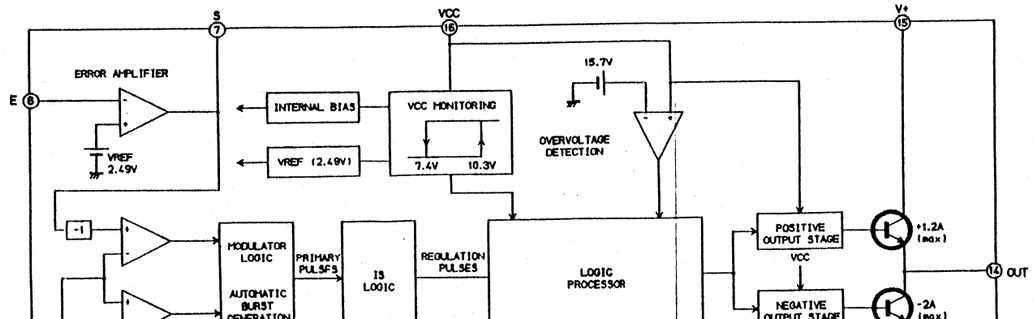

ADJ-COIL
PY
PL
PC
Live (Brown)
Neutral (Blue)
AC230V 50Hz
PX
Live (Brown)
F991 T2A
L992
L991
RP901
R991 470K 1/2W
C991 M-1 AC250V
R901 4.7 5W
D901 BYW56
D902 BYW56
D903 BYW56
D904 BYW56
C901 RIKV 2200
C902 RIKV 2200
C903 BIKV 2200
C904 400V 150μ
R902 12K 2W
R916 12K 2W
T901
D905 BYD33G
R905 4.7 1/2W
C905 25V 470μ
Q902 JC501Q.R SLOW-START
R932 2.2Ω 1/2W
C930 .027
R930 82K
R931 150K
C932 1000
C931 1μ
C916 .68
R904 15 2W
IC901 TEA2261 REG-CONT
VCC V+ OUT GND GND RO CO CI
IS IN ICMAX1 GND GND E S CI
C935 560
C934 .039
R936 1K
R933 2.2K
C933 1μ
R921 1
L904 2.2μH
R940 R907 18 1/2W
C906 25V 47μ
Q901 2SD1887 SW-REG
D907 RD3.0FB2
R912 100
L901
D906 BYV96E
C907 R2K 330
R906 820 10W
L903
C909 2700 1600V
D908 1N4148
C913 3300 AC400V F
R939 .33 2W
R910 .27 2W
D909 RD3.0FB2
R968 6.8Ω 1/2W
R969 6.8Ω 1/2W
R983 330 1/2W
R938 10K
R934 2.2K
C937 .47
R937 27K
R935 2.2K
PC951 TLP621
LIVE
R979 27 1/2W
D950 BYW96E
C950 R2KV 1000
L951 390μH
C951 200V 100μ
C952 200V 130μ
R950 F-270K (MB)
VR951 B-10K
R951 F-13K (MB)
120V
IC953 SI-3120C 12V REG
12.9V 4.3V 12V 12V 0V
D958 1N4148
C975 1μ
D959 1N4148
C974 25V 10μ
R965 15K
IC951 μPC78M05H 5V REG
8.9V 5V 0V
C97 10V 100μ
CT-25M1E
CT-25M1E
12V
C955 B500V 1000
C956 16V 2200μ
C957 25V 100μ
Z950 PRF1600
D952 BYW95B
IC952 μPC78M05H 5V REG
12.9V 5V 0V
C96 10V 100μ
Q950 2SA950-Y POWER-SW-1
9V 8.9V 8.2V
C958 B500V 1000
D953 BYW95B
C959 25V 100μ
R953 10K
Z951 PRF630
C961 B500V 1000
R955 .82 1/2W
D954 1N4003D
C962 50V 100μ
R952 1K 2W (MB)
D955 RD30FB3
C963 2-.01
C964 50V 10μ
-30V
D960 1N4148
R970 1K
CT-25M1E CT-25M1E ONLY
C965 500V 1000
Z952 PRF2000
D956 BYW95B
C966 35V 1000μ
21.3V 20.6V
Q952 2SA950-Y POWER SW-3
R975 10K
R995 1K
C983 50V 10μ
R974 5.6K
19.9V
Q951 JC501-Q.R POWER-SW-2
12.2V 6.8V .2V
Q953 JC501-Q.R ERROR-AMP
R986 1.5K
D961 RD6.2EB3

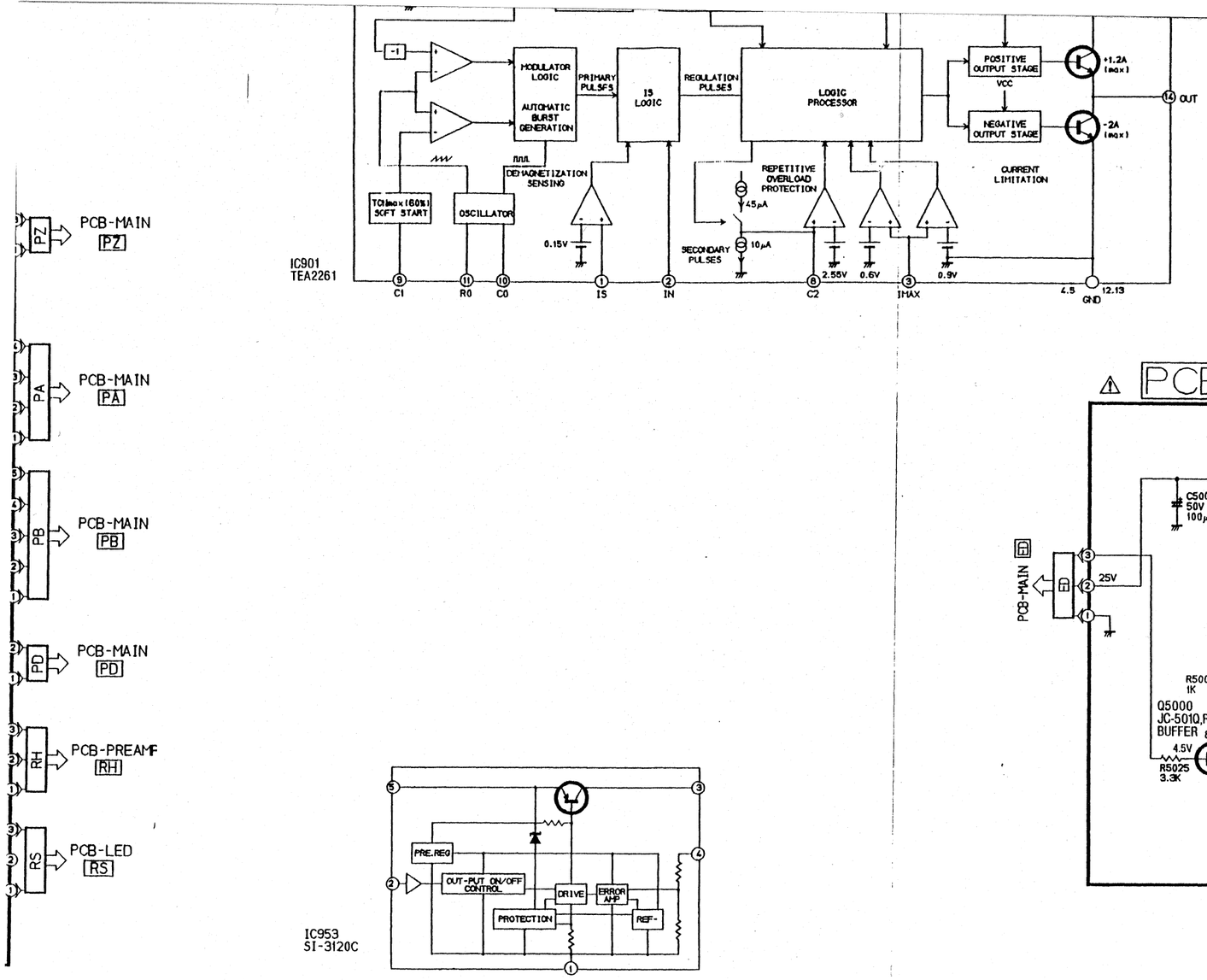
PCB-POWER

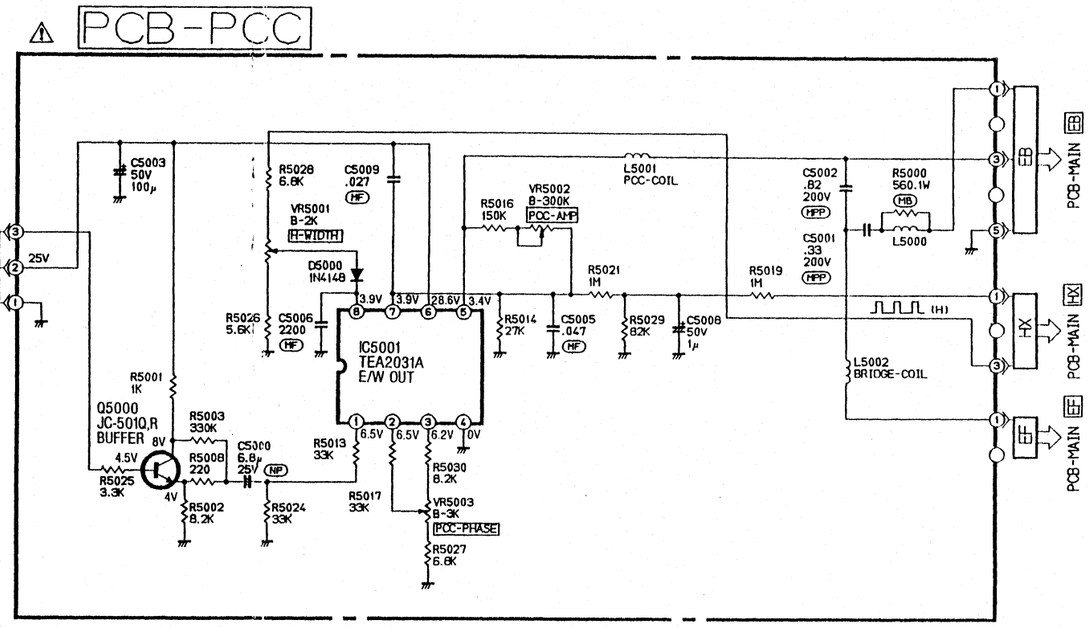
⚠ TRANSMITTER-REMOCON



CT-25M1EM(G)
CT-25M1EPM ONLY

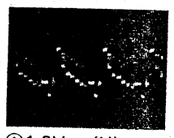




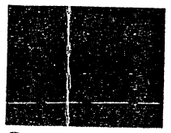


CT-25M1EPM
CT-25M1EPT
CT-25M1ETM
CT-25M1EM(G) (2/2)

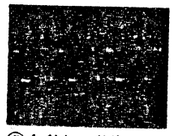
CHASSIS WAVEFORMS

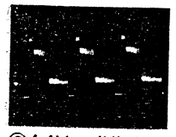

①1.8Vp-p(H)

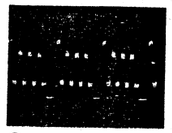
②0.4Vp-p(H)

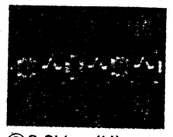

③9.6Vp-p(H)

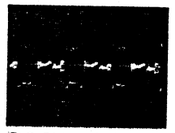
④0.4Vp-p(H)


⑤4.4Vp-p(H)

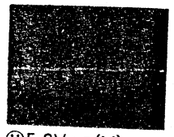

⑥4.4Vp-p(H)


⑦4.4Vp-p(H)

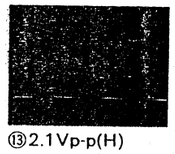

⑧0.2Vp-p(H)

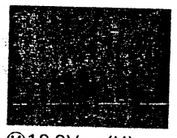

⑨0.2Vp-p(H)

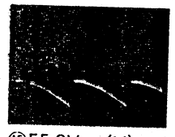
⑩1.0Vp-p(H)

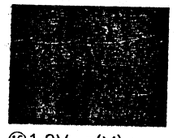

⑪5.6Vp-p(V)

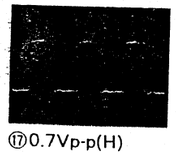
⑫1.5Vp-p(H)

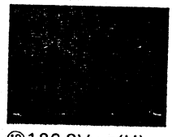

⑬2.1Vp-p(H)


⑭10.0Vp-p(H)


⑮55.0Vp-p(V)


⑯1.0Vp-p(V)


⑰0.7Vp-p(H)


⑱136.0Vp-p(H)

MODELS / PARTS	CT-25M1EPM	CT-25M1EPT	CT-
D718	1N4148	×	
J236	0	×	
C2A4	25V 100μ	×	
R2A6	180	×	
R2A7	330	560	
C101	J-33 50V SL	—	J-1
C160	×	—	5(
D701	1N4148	—	
D702	1N4148	—	
Q106	×	—	JA
R101	150	—	
R107	270	—	
R160	5.6K	—	
R174	5.6K	—	
R178	×	—	
TU101	TEMD1X028A	—	ENV
C7702	—	×	J-2
C7703	—	×	J-2
R7711	—	×	
X7703	—	9.8304MHz	6,
IC7704①㊼	—	OPEN	
IC7704	—	PCF 84C81/039 CTV 972 V1.1	MA
J297	×	—	
J6	O	—	

SP391 10W 8Ω
XG
PCB-POWER
PD
SR
PD

IC361
AN5265
AUDIO AMP
DC VOL CONTROL
AMP
MUTE
VCC1
VCC2
12V
5.4V
0.3V
9.7V
10V
10V
20.6V
C362 50V 10μ
C366 25V 100μ
C367 50V .1
C368 50V 10μ
R362 15K
C363 25V 1000μ
C365 25V 470μ
R366 4.7K
R367 10K
D361 1N4148
R363 33K
C364 .022 (MF)
R364 180
R361 4.7
20V
C370 Z-.01
D362 EQA02-11CD /RD12EB2.B3
R369 560 1W (MB)
R365 1K
C369 50V 10μ
C361 .047 (TF)
AUDIO

R3B8 330K
C2A4
C2A0 50V 10μ
C3A3 25V 10μ (NP)
C2A9 .1 (TF)
C2A5 50V 10μ
R2A7
R2A6
R3A2 560
IC2A2
M51320P
ANALOG-SW
11.9V
4.9V
4.2V
4.3V
C3D0 50V 10μ
12V
4.3V
11.9V
4.3V
3.6V
C3C2 2200
C2A6 35V 10μ
R2A4 10K
11.9V
0V
R2A5 10K
Q2A2
JC501-Q,R
AV-SW-1
C2A7 35V 10μ
R2A0 2.7K
R2A9 2.2K
R3B0 1K
R3A1 1K
SWITCHED-AUDIO

S701
POW
CHAR
AFT
TU+
CLR
POS
AV(BAND)
TU-
S704
CH+
CH-
S705
SELECT
S703
FUNCTION
S702
PRESET
D734 1N4148
D733 1N4148
D732 1N4148
D731 1N4148
D736 1N4148
D721 D723 D722 D724
L701 47μH
L703 47μH
L702 47μH
L704 47μH
R753 1K
D721-D724
EQA02-11CD/RD12EB2.B3

SWITCHED VIDEO
D2B1 1N4148
D2A2 1N4148
COMPO VIDEO

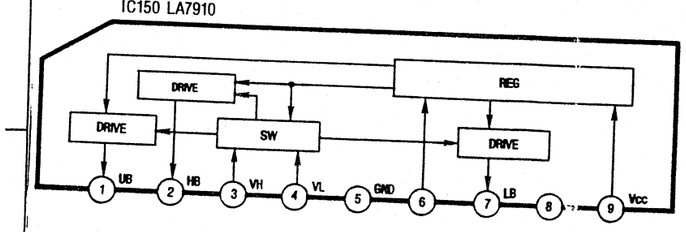
AUDIO IN
R
L
J2B1
R3B3 5.6K
R3B4 5.6K
C3B2 25V 10μ (NP)
R3B2 560
R2B1 56K
R2B3 10K
R2B5 75
Q2B1
JA101-Q,R
BLK-BUFFER-1
Q2B2
JC501-Q,R
BLK-BUFFER-2
Q2B3
JC501-Q,R
R-BUFFER
Q2B4
JC501-Q,R
G-BUFFER
C2B5 50V 47μ
C2B6 50V 47μ
C2B7 50V 47μ
R2C0 4.7K
R2C2 1K
R2C4 39K
R2C7 1K
R2C8 39K
R2D1 1K
R2B7 75
R2B8 75
R2B9 75
R2D9 1K
R2C1 75
R2C3 1K
R2C5 3.9K
R2C6 1K
R2C9 3.9K
R2D0 1K
0.6V
0V
12V
1.0V
0.4V
Q2A4
JC501-Q,R
VIDEO OUT
R2B6 75
D2A1 EQA02-05CD
L109 22μH
12V
2.8V
2.1V
R2E1 220
C137 25V 100μ
C2B2 10V 1000μ
R2A1 120 1W (MB)

R737 1K
D719 1N4148
R783 10K
R781 270K
R740 27K
R739 47K
D739

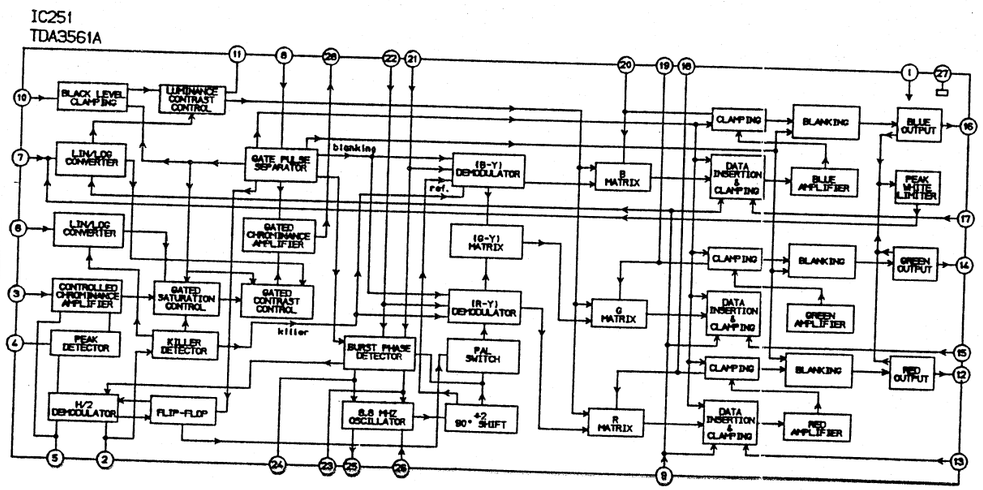
12

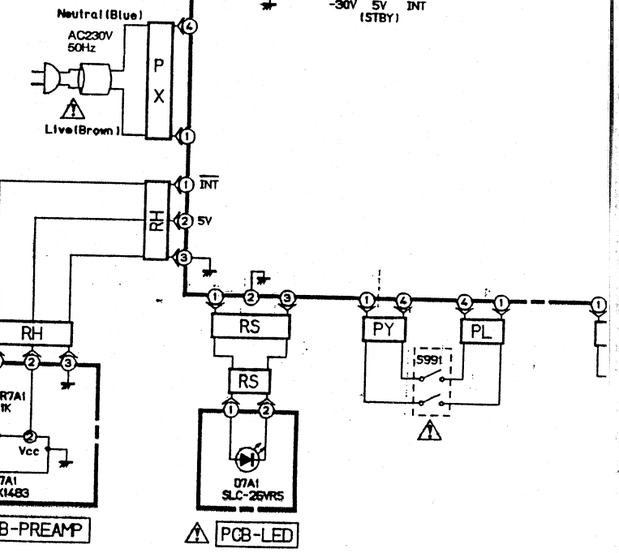
PCB-MAIN

IC150 LA7910



IC251
TDA3561A

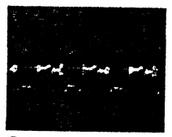




PCB-PREAMP

PCB-LED

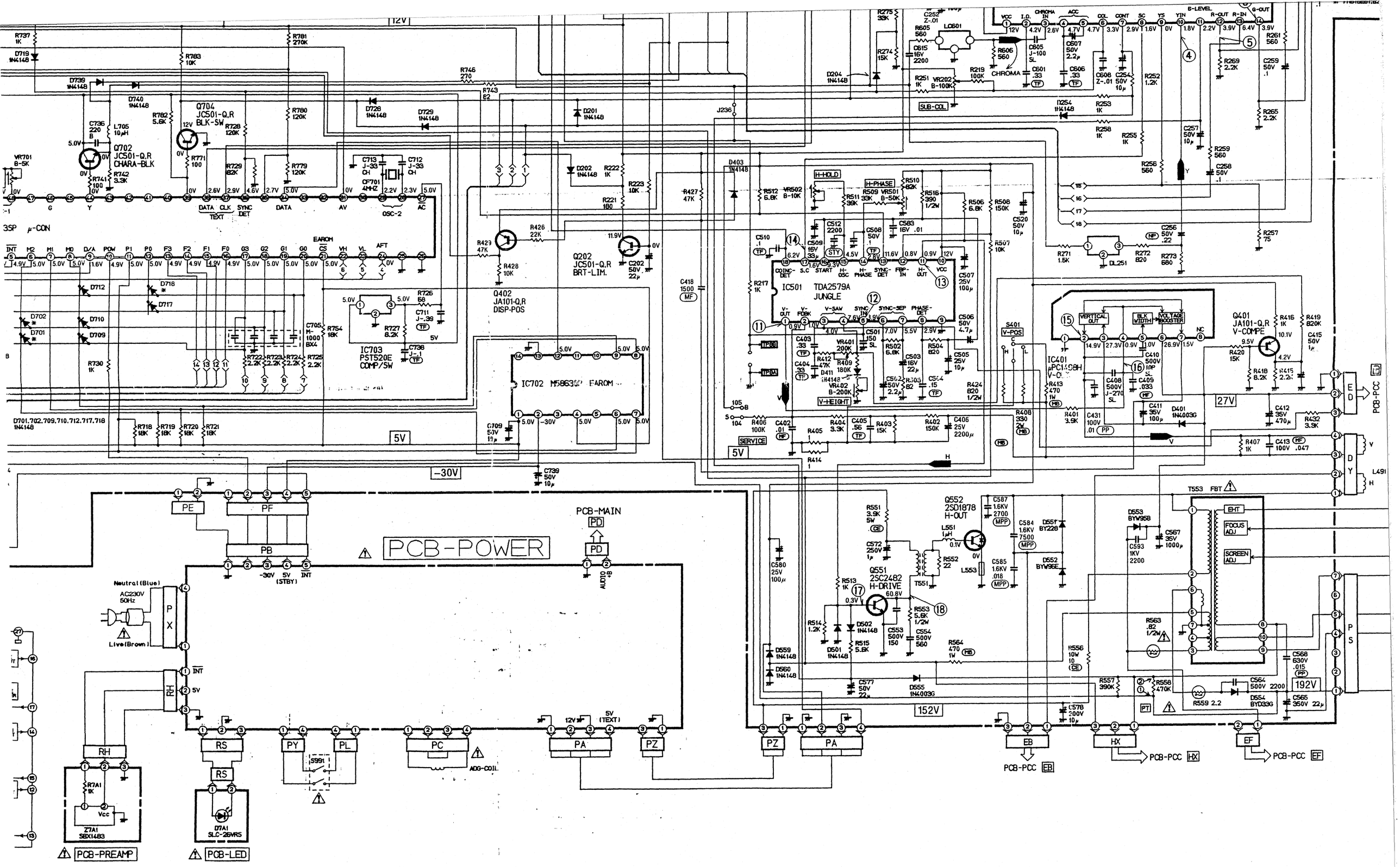
SCHEMATIC DIAGRAM MODELS : CT-25M1EPM/CT-25M1EPT/CT-25M1



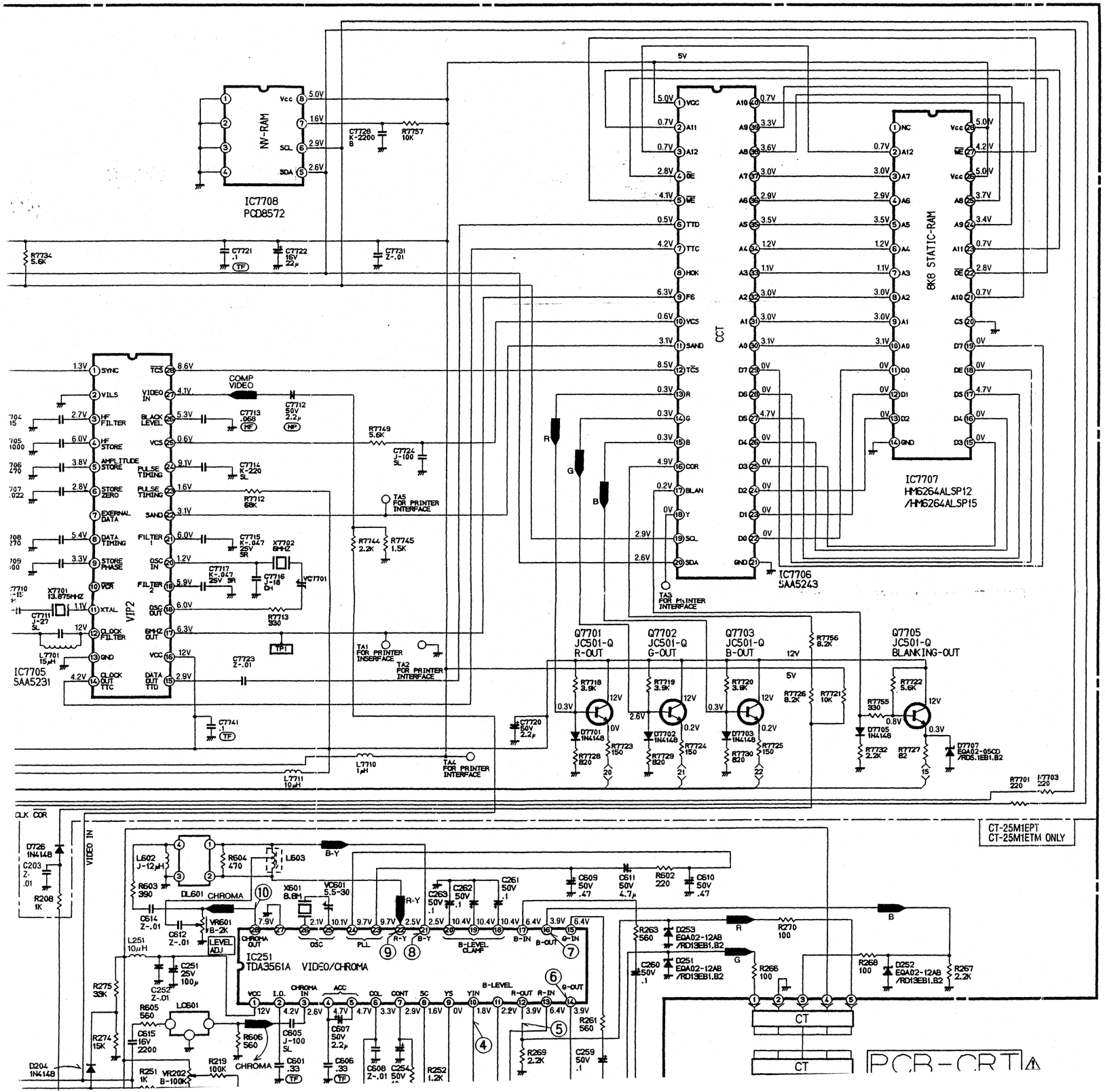
⑨0.2Vp-p(H)

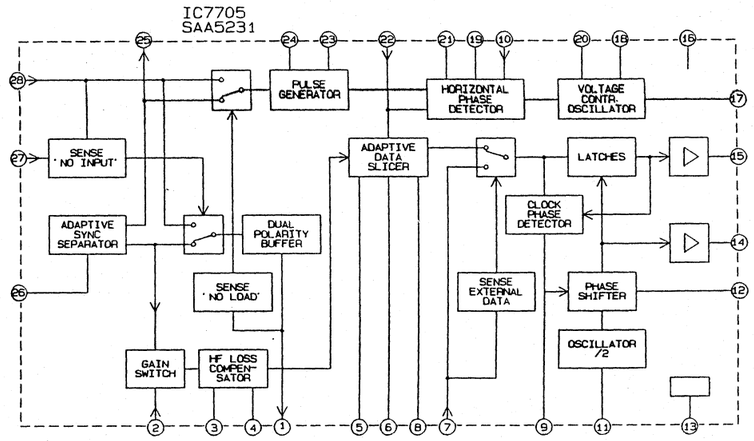
⑱136.0Vp-p(H)

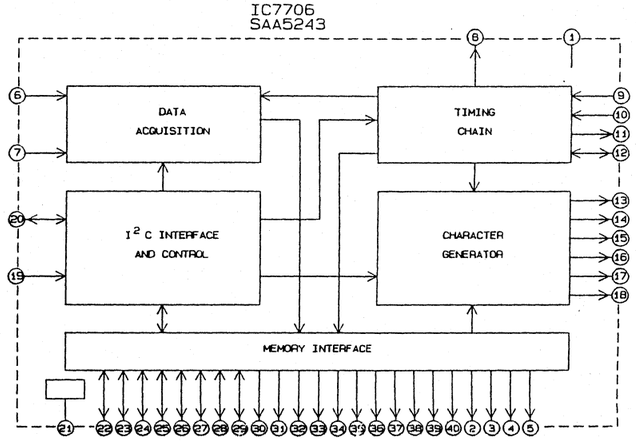
PARTS \ MODELS	CT-25M1EPM	CT-25M1EPT	CT-25M1ETM
D718	1N4148	×	←
J236	0	×	←
C2A4	25V 100μ	×	←
R2A6	180	×	←
R2A7	330	560	←
C101	J-33 50V SL	←	J-120 50V SL
C160	×	←	50V 2.2μ
D701	1N4148	←	×
D702	1N4148	←	×
Q106	×	←	JA101-Q, R
R101	150	←	220
R107	270	←	180
R160	5.6K	←	×
R174	5.6K	←	×
R178	×	←	5.6K
TU101	TEMD1X028A	←	ENV57839FIC
C7702	—	×	J-22 50V CH
C7703	—	×	J-22 50V CH
R7711	—	×	1M
X7703	—	9.8304MHz	6.000MHz
IC7704 ①㉗	—	OPEN	GND
IC7704	—	PCF 84C81/039 CTV 972 V1.1	MAB8461P- -W115
J297	×	←	O
J6	O	←	×


PCB-POWER
PCB-MAIN
PCB-PREAMP
PCB-LED
PCB-PCC
IC702 M58630P EAROM
IC703 PST520E COMP/SW
IC501 TDA2579A JUNGLE
Q702 JC501-Q,R CHARA-BLK
Q704 JC501-Q,R BLK-SW
Q202 JC501-Q,R BRT-LIM.
Q402 JA101-Q,R DISP-POS
Q401 JA101-Q,R V-COMPE
Q551 2SC2482 H-DRIVE
Q552 2SD1878 H-OUT
IC401 μPC1498H V-OUT
SUB-COL
SERVICE
CHROMA
V-POS
V-HEIGHT
H-HOLD
H-PHASE
VERTICAL OUT
BLK WIDTH
VOLTAGE BOOSTER
FOCUS ADJ
SCREEN ADJ
DATA CLK SYNC TEXT DET
DATA
OSC-2
ADG-COIL
AC230V 50Hz
Neutral (Blue)
Live (Brown)
AUDIO +B
12V
5V
-30V
152V
192V
27V

S : CT-25M1EPM/CT-25M1EPT/CT-25M1ETM



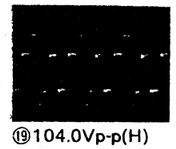




⚠ SERVICING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.

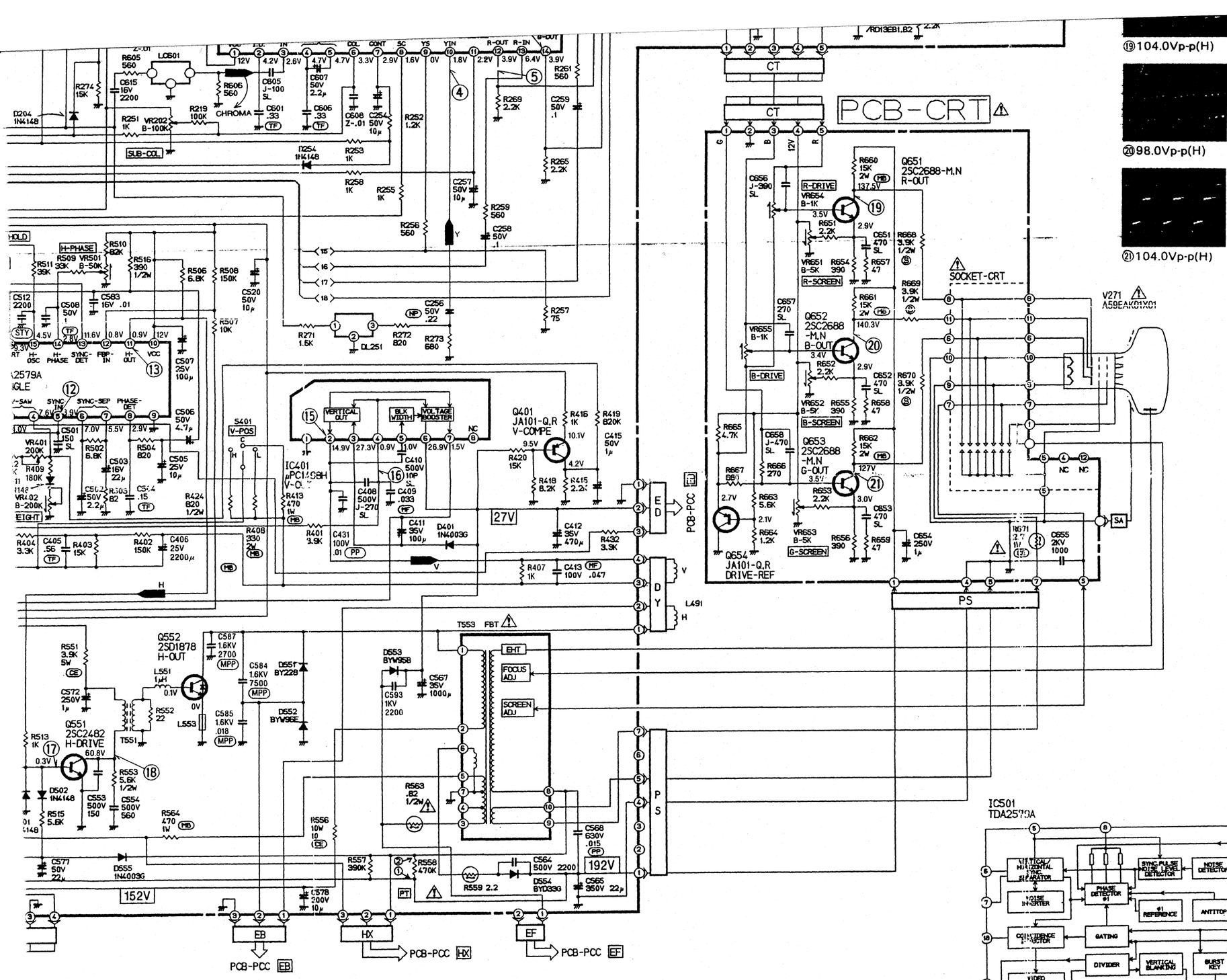
DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.



⑲104.0Vp-p(H)

NOTE 1:

1. The unit of resistance is "ohm" with no.symbol.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistors, if not specifically designated, is less than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   (CE) : Cemented resistor
   (MB) : Metal oxide film resistor (type B)
   (MPC) : Metel plate cement resistor.
   (MI) : Metal [illegible]



⑲104.0Vp-p(H)

⑳98.0Vp-p(H)

㉑104.0Vp-p(H)

1. Unless otherwise specified, all voltages are measured with no signal and all controls set for normal picture.
2. Unless otherwise specified, all resistors are rated at less than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   - (CE) : Cemented resistor
   - (MB) : Matal oxide film resistor (type B)
   - (MPC) : Metel plate cement resistor.
   - (ML) : Metal linear resistor.
   - (S) : Fixed composition resistor
   - (W) : Wire wound resistor
   - (M) : Metal film resistor
5. The tolerance of resistor value, if not specifically designated, is: ±5%, K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated, is:
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   - (ALM) : Aluminus electrolytic capacitor
   - (MF) : Polyester capacitor
   - (PP) : Polypropylene film capacitor
   - (TANT) : Tantalum capacitor
   - (TF) : Twin film capacitor.
   - (MF.PP) : Polyester polypropylene film capacitor.
   - (MPP) : Metallize plastic film capacitor.
   - (NP) : Non polarized electrolytic capacitor.
   - (PS) : Styrol capacitor.
   - (SC) : Semi conductor capacitor.
   - ⧧ : Electrolytic capacitor
9. The DC working voltage of capacitor, if not specifically designated is: 50V
10. The tolerance of capacitor value, if not specifically designated is:
    ±10% for polyester capacitor
    ±5% for ceramic capacitor
    and J = ±5% K = ±10% M = ±20% P = +100% 0%
    C = ±0.25PF D = ±0.5PF F = ±1PF Z = +80% −20% N = ±30%

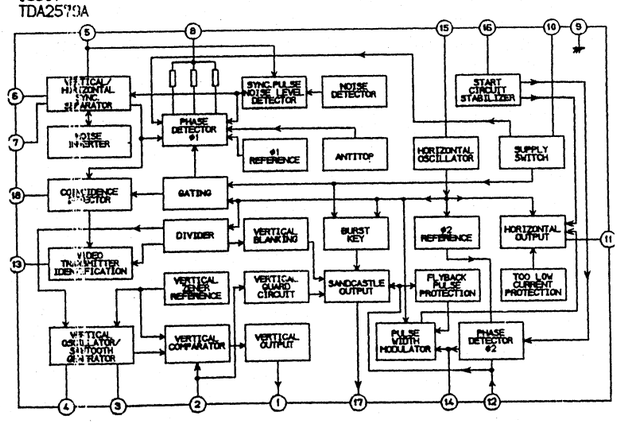
SPECIFIC SYMBOL

Zener Diode	Varistor
Varicap	Crystal unit
Posistor	Air Gap
Thermistor	Part (resistor) attached on the copper-foil side of PCB
Fusible Resistor	Caramic filter

NOTE 2:

1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken with offset PAL colour bar signal.
3. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

IC501
TDA2579A

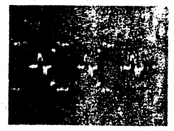


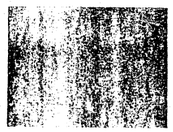
Printed in JAPAN

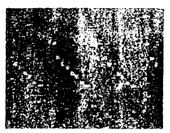
CT-25M1EPM
CT-25M1EPT
CT-25M1ETM
CT-25M1EM(G) (1/2)

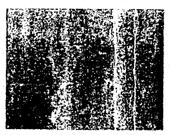
CHASSIS WAVEFORMS

①1.8Vp-p(H)


②0.4Vp-p(H)


③[illegible]p-p(H)


④0.4Vp-p(H)


⑤4.4Vp-p(H)

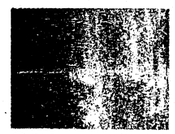
⑥4.4Vp-p(H)

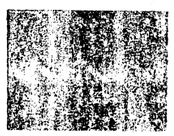
⑦4.4Vp-p(H)

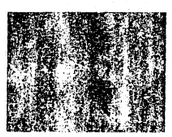
⑧1.3Vp-p(H)

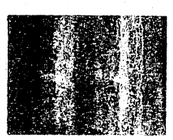
⑨1Vp-p(H)

⑩1.0Vp-p(H)

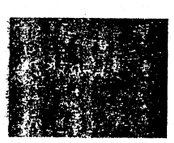

⑪5.6Vp-p(V)


⑫1.5Vp-p(H)

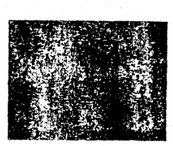

⑬2.1Vp-p(H)


⑭10.0Vp-p(H)

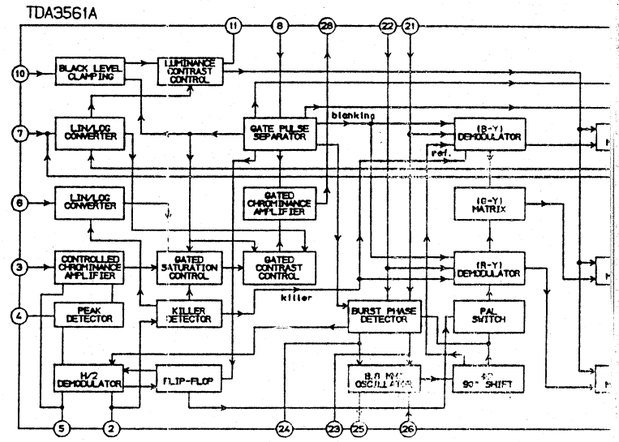
⑮55.0Vp-p(V)

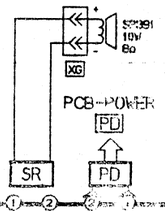

⑯1.0Vp-p(V)

⑰0.7Vp-p(H)


⑱136.0Vp-p(H)

IC251
TDA3561A





PCB-MAIN

TU101

IC150 LA7910 BAND-SW

IC704 μPC574-J,K 33V REG

Q701 2SC1740S-E TUNING-PULSE-AMP

Q301 JC501-Q,R BUFFER

Q104 JC501-Q,R 1ST-VIDEO-AMP

IC101 M51496P VIF.SIF.DEMO&AFT

Q302 JC501-Q,R 1ST-AUDIO-AMP

Q105 JC501-Q,R AV-SW

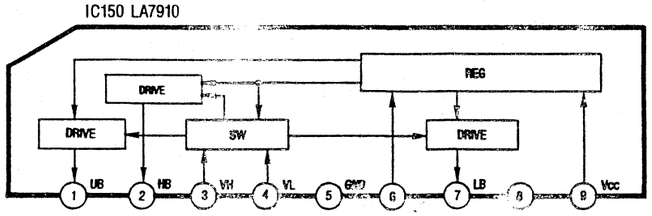
IC701 M50439-563SP μ-CON

Q704 JC501-Q,R BLK-SW

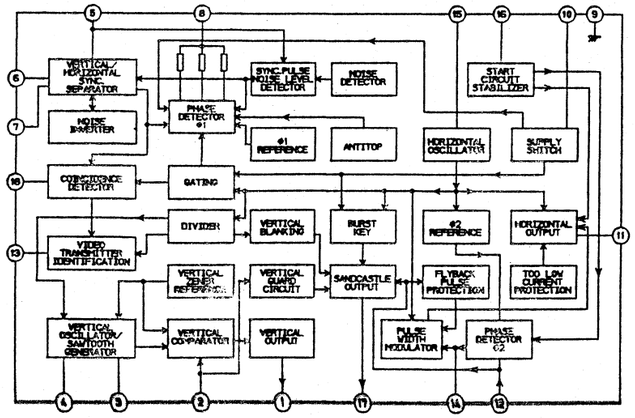
Q702 JC501-Q,R CHARA-BLK

IC703 PST520E COMP/SW

IC150 LA7910



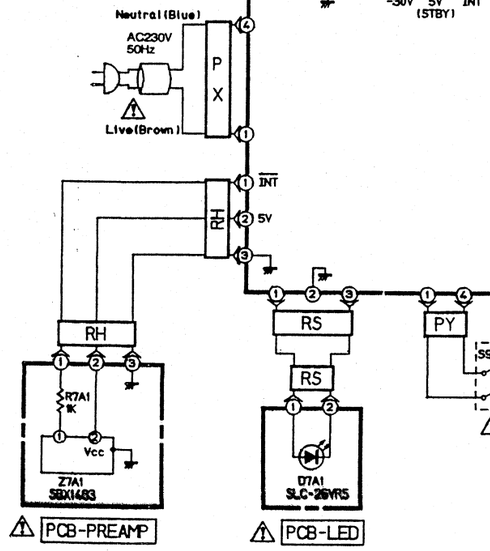
IC501 TDA2579A



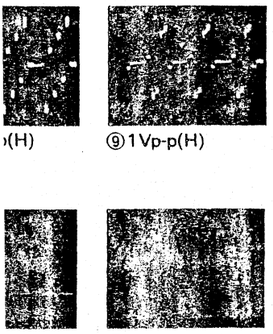
PCB-PREAMP

PCB-LED

PCB-PO



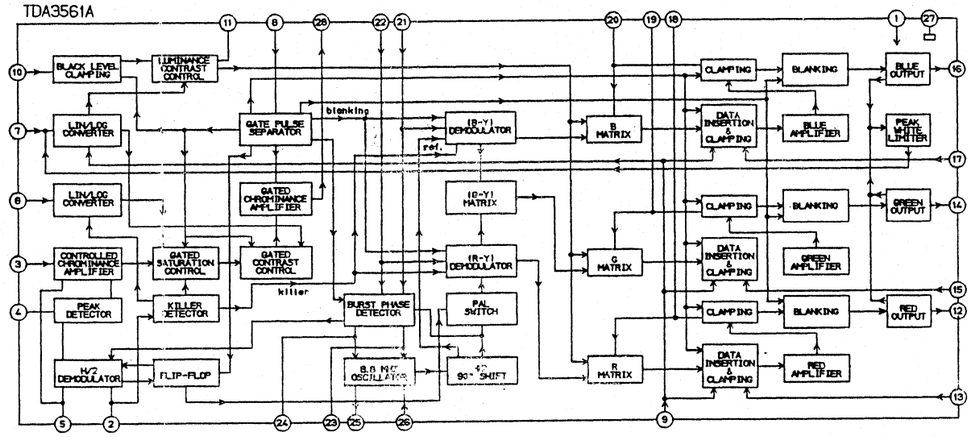
SCHEMATIC DIAGRAM MODEL : CT-25M1EM(G)



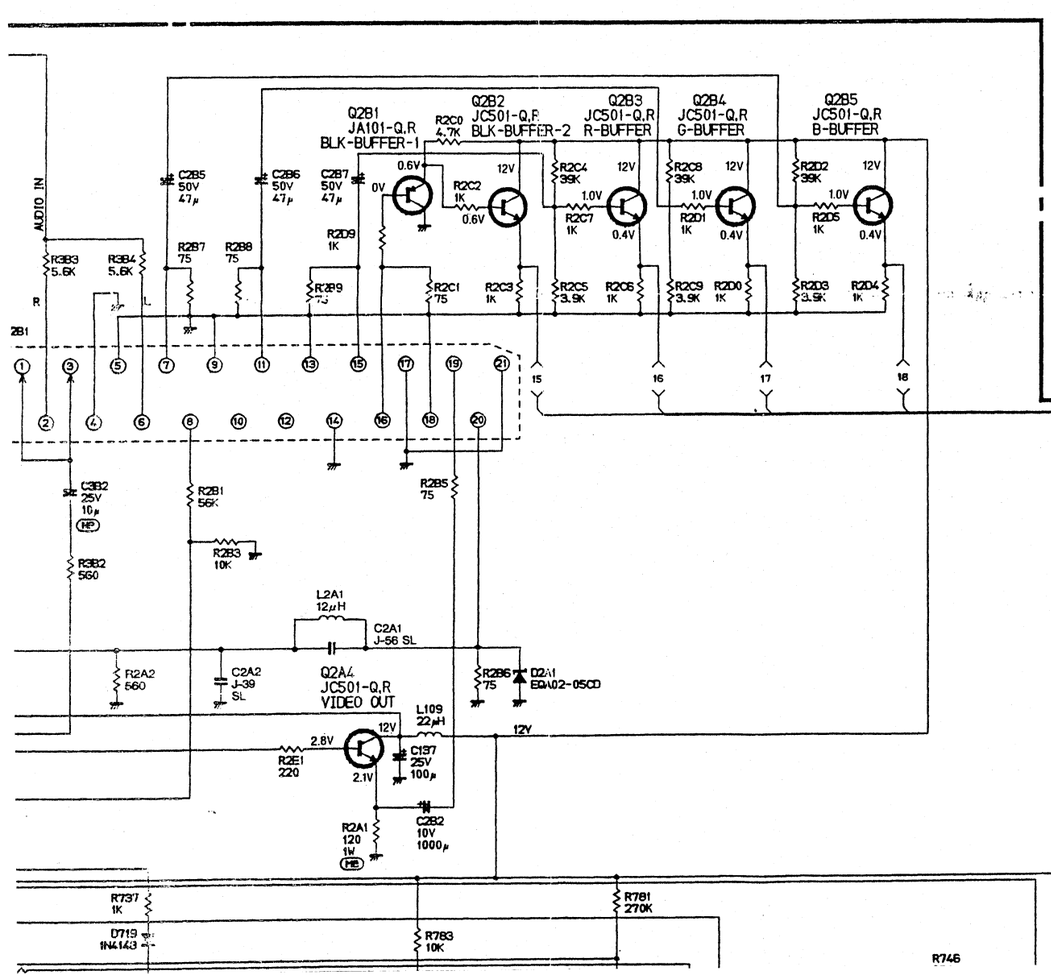
(H) ⑨1Vp-p(H)

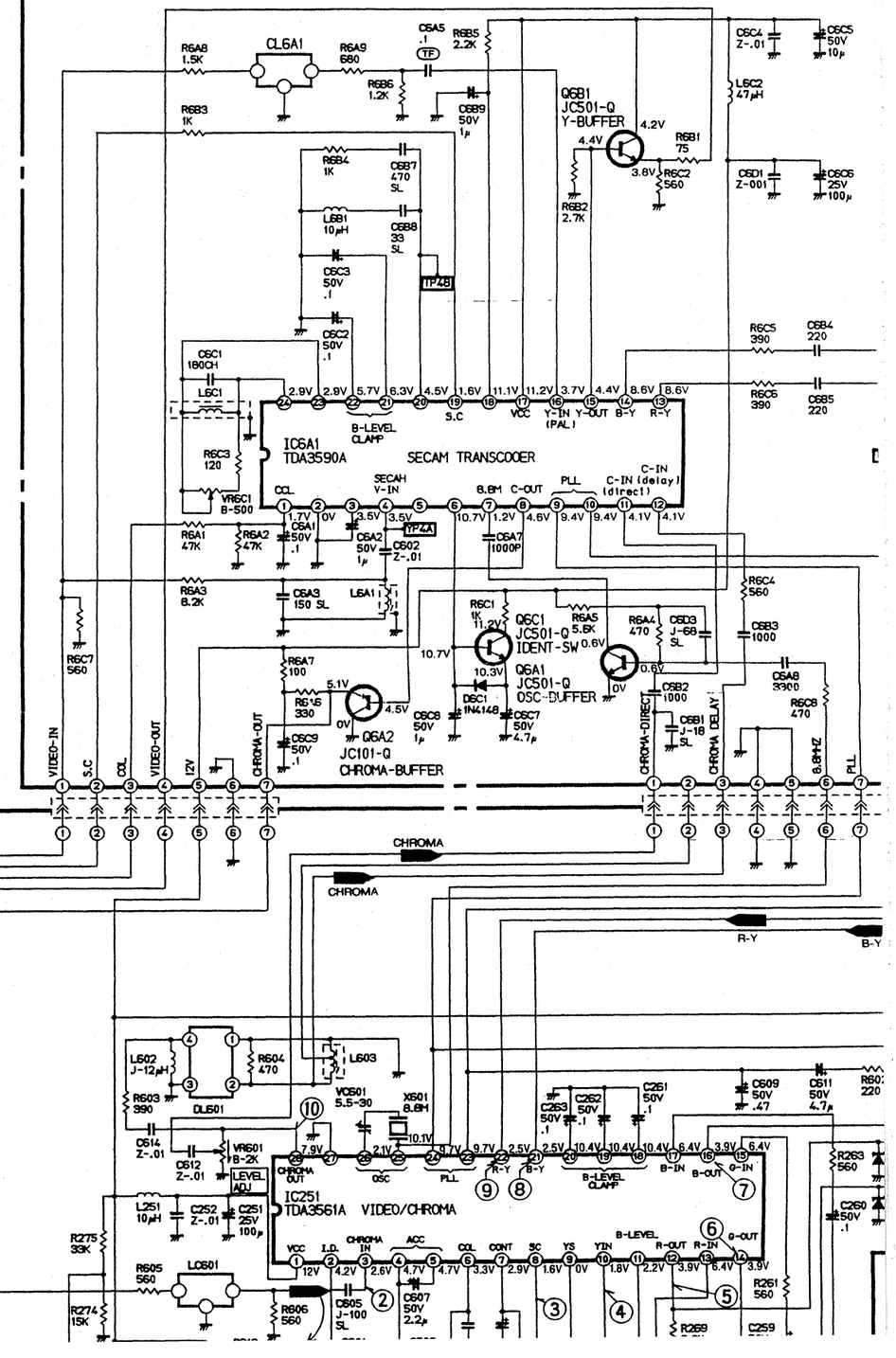
(H) ⑱136.0Vp-p(H)

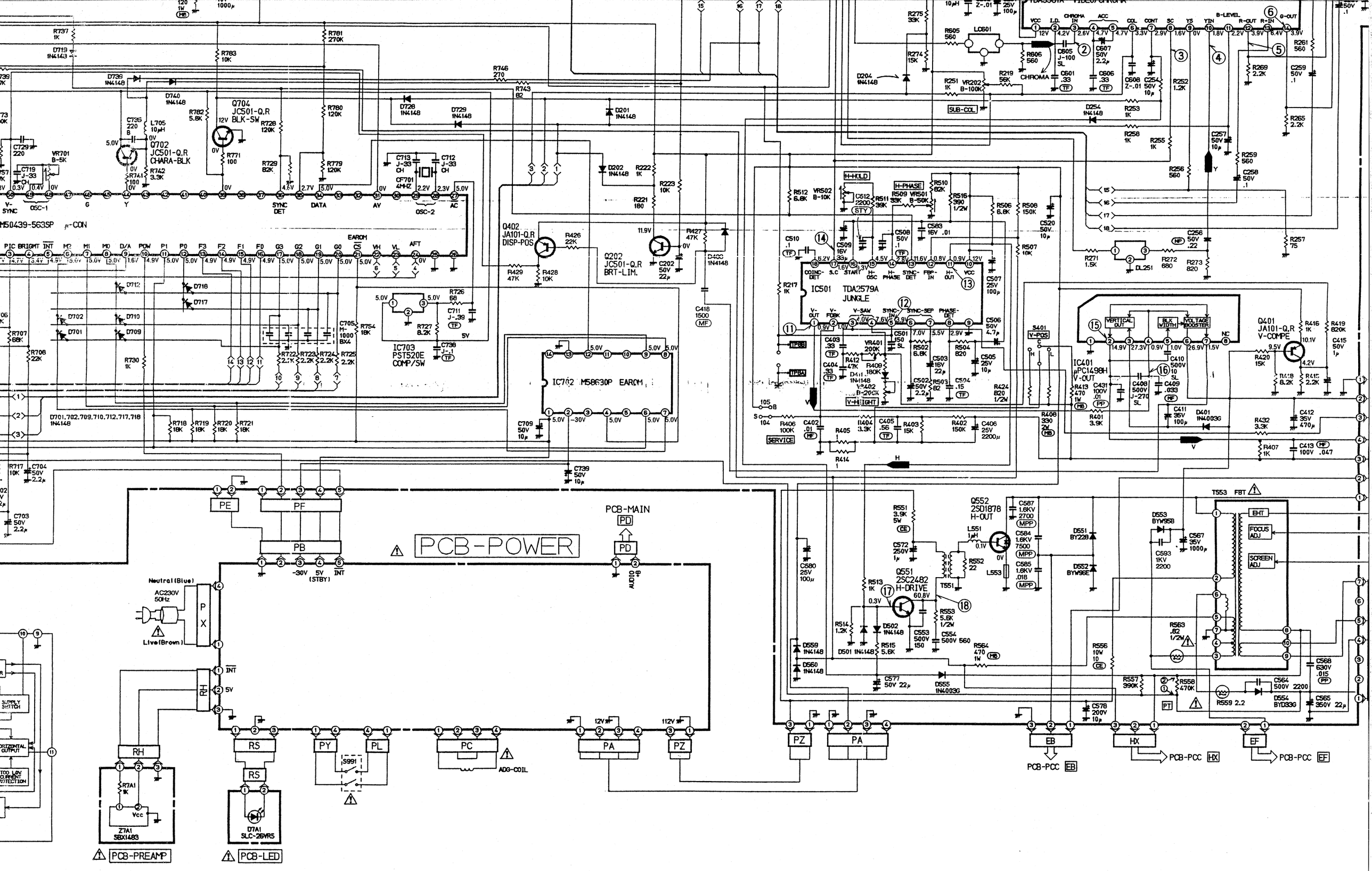
IC251
TDA3561A



PCB-SECAM






PCB-POWER
PCB-MAIN
PD
PE
PF
PB
PA
PZ
PY
PL
PC
RS
RH
PX
EB
HX
EF
PCB-PCC EB
PCB-PCC HX
PCB-PCC EF
PCB-PREAMP
PCB-LED
ADG-COIL
Neutral (Blue)
AC230V 50Hz
Live (Brown)
IC501 TDA2579A JUNGLE
IC401 μPC1498H V-OUT
IC703 PST520E COMP/SW
IC702 M58630P EAROM
Q401 JA101-Q,R V-COMPE
Q402 JA101-Q,R DISP-POS
Q202 JC501-Q,R BRT-LIM.
Q704 JC501-Q,R BLK-SW
Q702 JC501-Q,R CHARA-BLK
Q552 2SD1878 H-OUT
Q551 2SC2482 H-DRIVE
M50439-563SP μ-CON
T553 FBT
S401 V-POS
SERVICE
CHROMA
SUB-COL
H-H/LD
H-PHASE
V-HEIGHT
V-SAW
V-FBK
V-OUT
EAROM
PIC
BRIGHT
INT
AFT
VERTICAL OUT
BLK WIDTH
VOLTAGE BOOSTER
EHT
FOCUS ADJ
SCREEN ADJ
S991
Z7A1 SBX1483
D7A1 SLC-26VR5

L : CT-25M1EM(G)

CB-SECAM

⑲104.0Vp-p(H)

⑳98.0Vp-p(H)

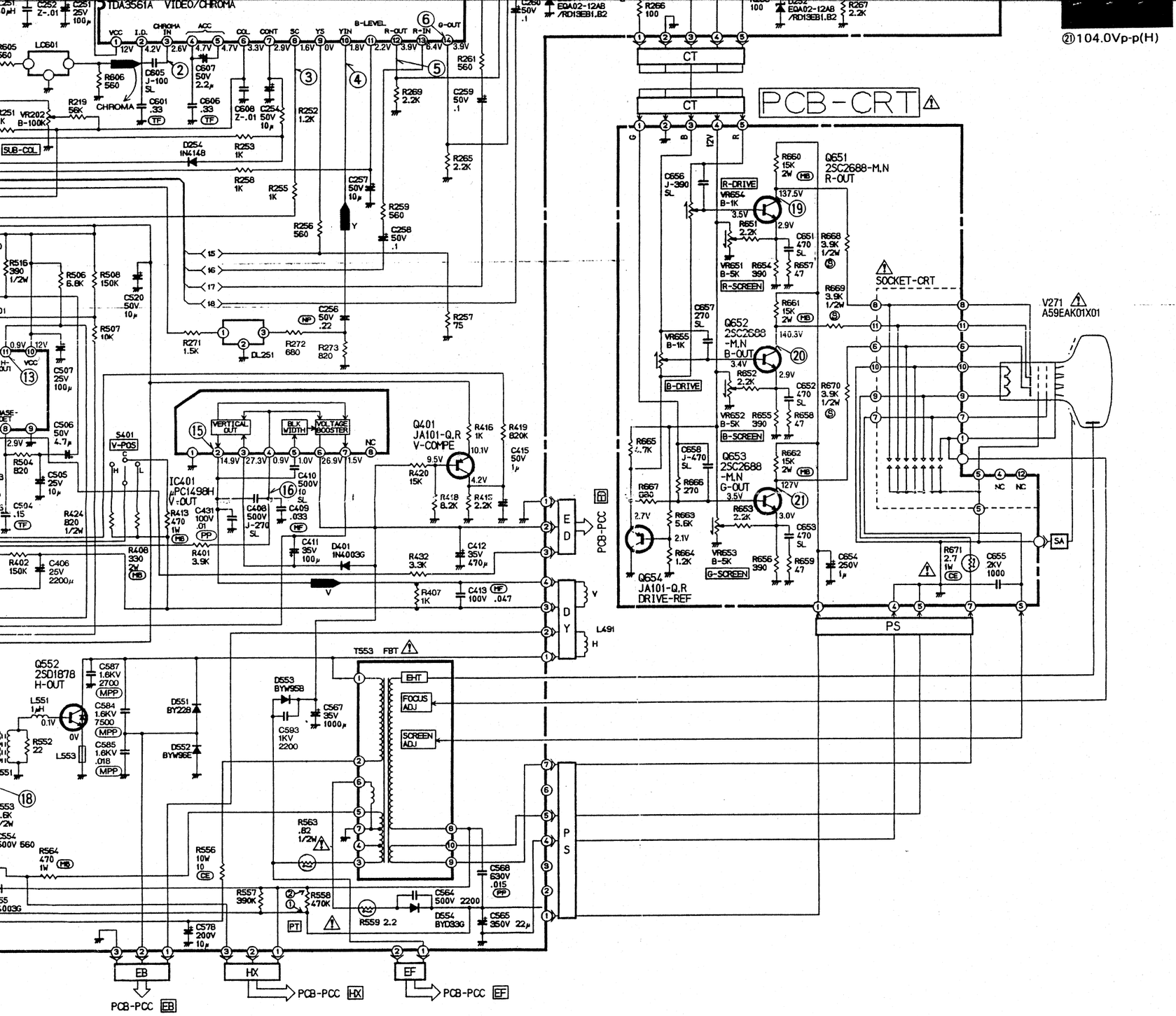
㉑104.0Vp-p(H)

SERVICING PRECAUTION

SYMBOLS INDICATE COMPONENTS HAVING SPECIAL CHARACTERISTICS IMPORTANT TO SAFETY AND PERFORMANCE. THERFORE REPLACEMENT OF ANY SAFETY PARTS SHOULD BE IDENTICAL IN VALUE AND CHARACTERISTICS. FOR ACCURACY OF THE REPLACEMENT REFER TO THE PARTS LIST OF SERVICE MANUAL.
DON'T DEGRADE THE SAFETY OF THE RECEIVERS THROUGH IMPROPER SERVICING.

NOTE 1:

1. The unit of resistance is "ohm" with no symbol.
   Accordingly, K = 1000 ohms
   M = 1000K ohms.
2. The wattage of resistors, if not specifically designated, is less than 1/4 watt.
3. Resistors, if not specifically designated, are carbon resistors.
4. The marks of resistors are as follows:
   (CE) : Cemented resistor
   (MB) : Metal oxide film resistor (type B)
   (MPC) : Metel plate cement resistor.
   (ML) : Metal linear resistor.
   (S) : Fixed composition resistor
   (W) : Wire wound resistor
   (M) : Metal film resistor
5. The tolerance of resistor value, if not specifically designated, is:
   ±5%, K = ±10% M = ±20%
6. The unit of capacitance, if not specifically designated, is;
   a) μF, for numbers less than 1
   b) PF, for numbers more than 1
7. Capacitors, if not specifically designated are Ceramic capacitors except electrolytic capacitors.
8. The marks of capacitors are as follows:
   (ALM) : Aluminus electrolytic capacitor
   (MF) : Polyester capacitor
   (PP) : Polypropylene film capacitor
   (TANT) : Tantalum capacitor
   (TF) : Twin film capacitor.
   (MF.PP) : Polyester polypropylene film capacitor.
   (MPP) : Metallize plastic film capacitor.
   (NP) : Non polarized electrolytic capacitor.
   (PS) : Styrol capacitor



(TANT) : Tantalum capacitor
(TF) : Twin film capacitor.
(MF.PP) : Polyester polypropylene film capacitor.
(MPP) : Metallize plastic film capacitor.
(NP) : Non polarized electrolytic capacitor.
(PS) : Styrol capacitor.
(SC) : Semi conductor capacitor.
⏚ : Electrolytic capacitor

9. The DC working voltage of capacitor, if not specifically designated is: 50V
10. The tolerance of capacitor value, if not specifically designated is:
    ±10% for polyester capacitor
    ±5% for ceramic capacitor
    and J = ±5% K = ±10% M = ±20% P = $^{+100\%}_{0\%}$
    C=±0.25PF D=±0.5PF F=±1PF Z=$^{+80\%}_{-20\%}$ N=±30%

SPECIFIC SYMBOL

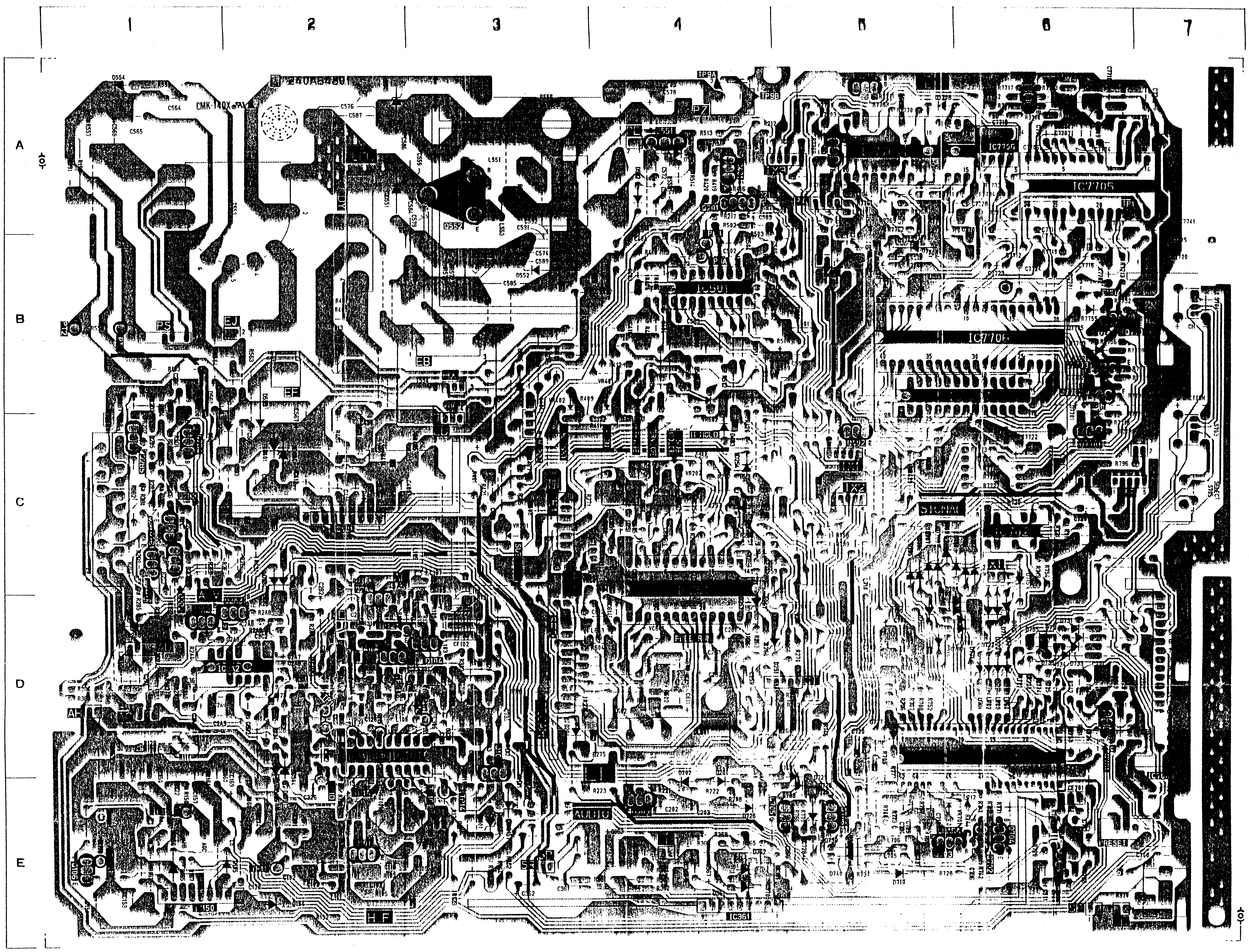
	Zener Diode		Varistor
	Varicap		Crystal unit
	Posistor		Air Gap
	Thermistor		Part (resistor) attached on the copper-foil side of PCB
	Fusible Resistor		Caramic filter

NOTE 2:

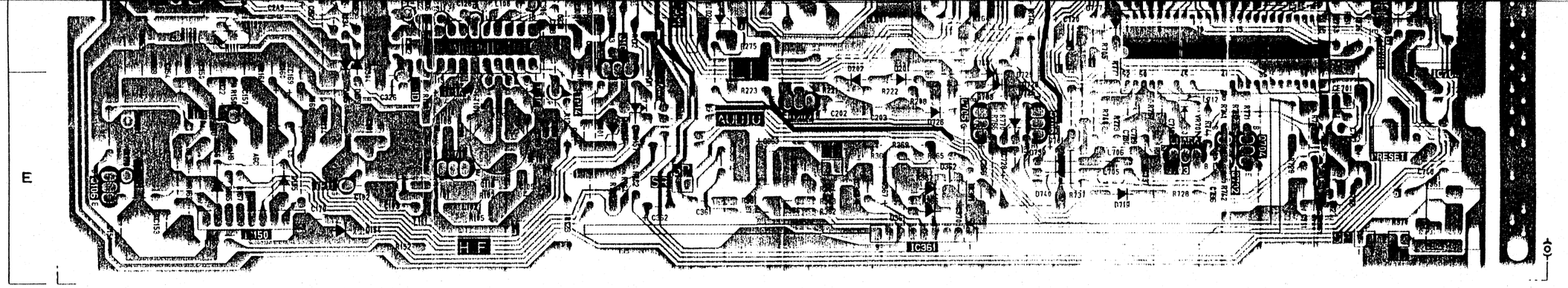
1. DC voltages were measured from points indicated to the circuit ground with a high-Z voltmeter.
2. Waveforms were taken with offset PAL colour bar signal.
3. This is a basic schematic diagram. Some sets may be subject to modification according to engineering improvement.

Printed in JAPAN

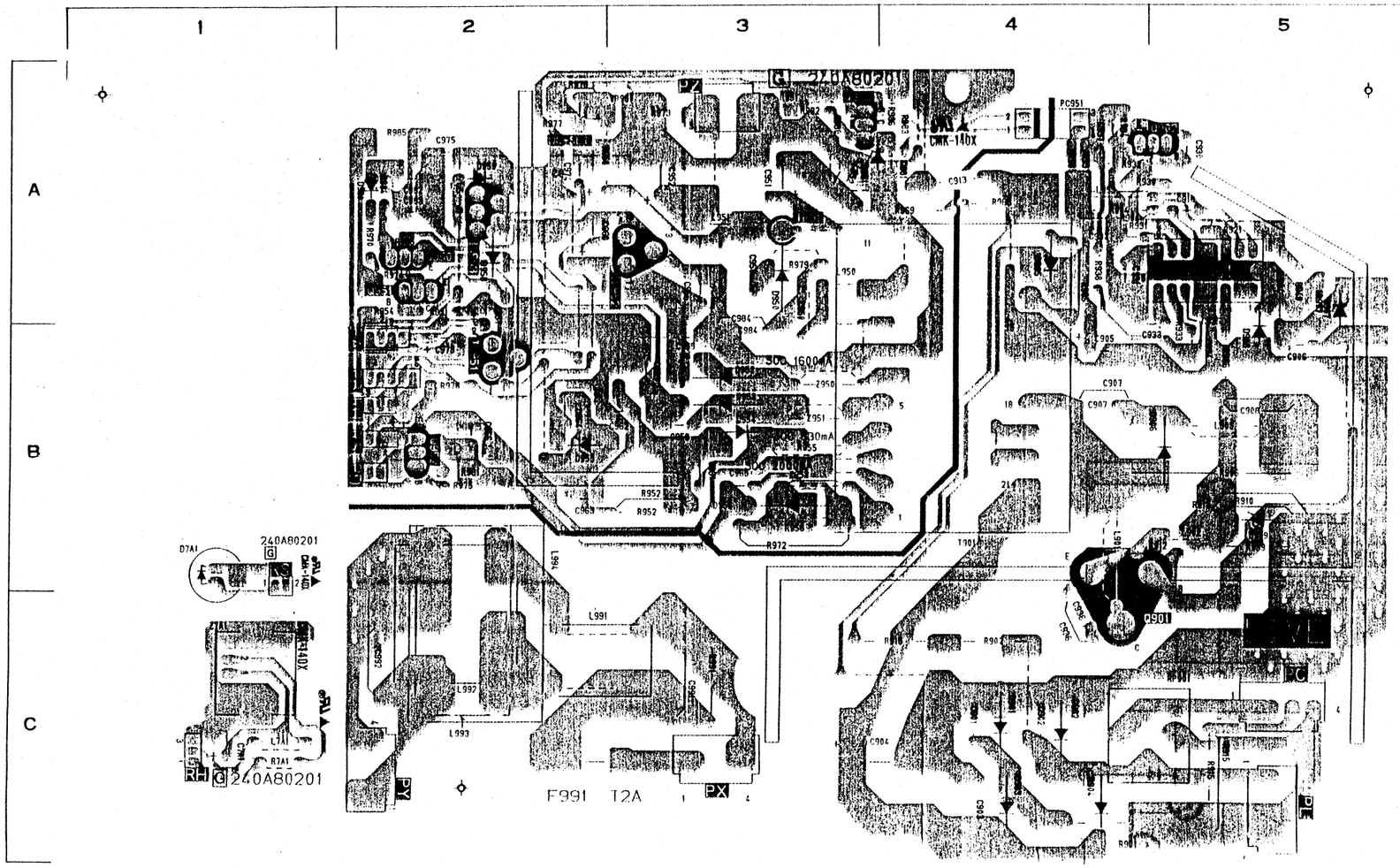
PCB MAIN



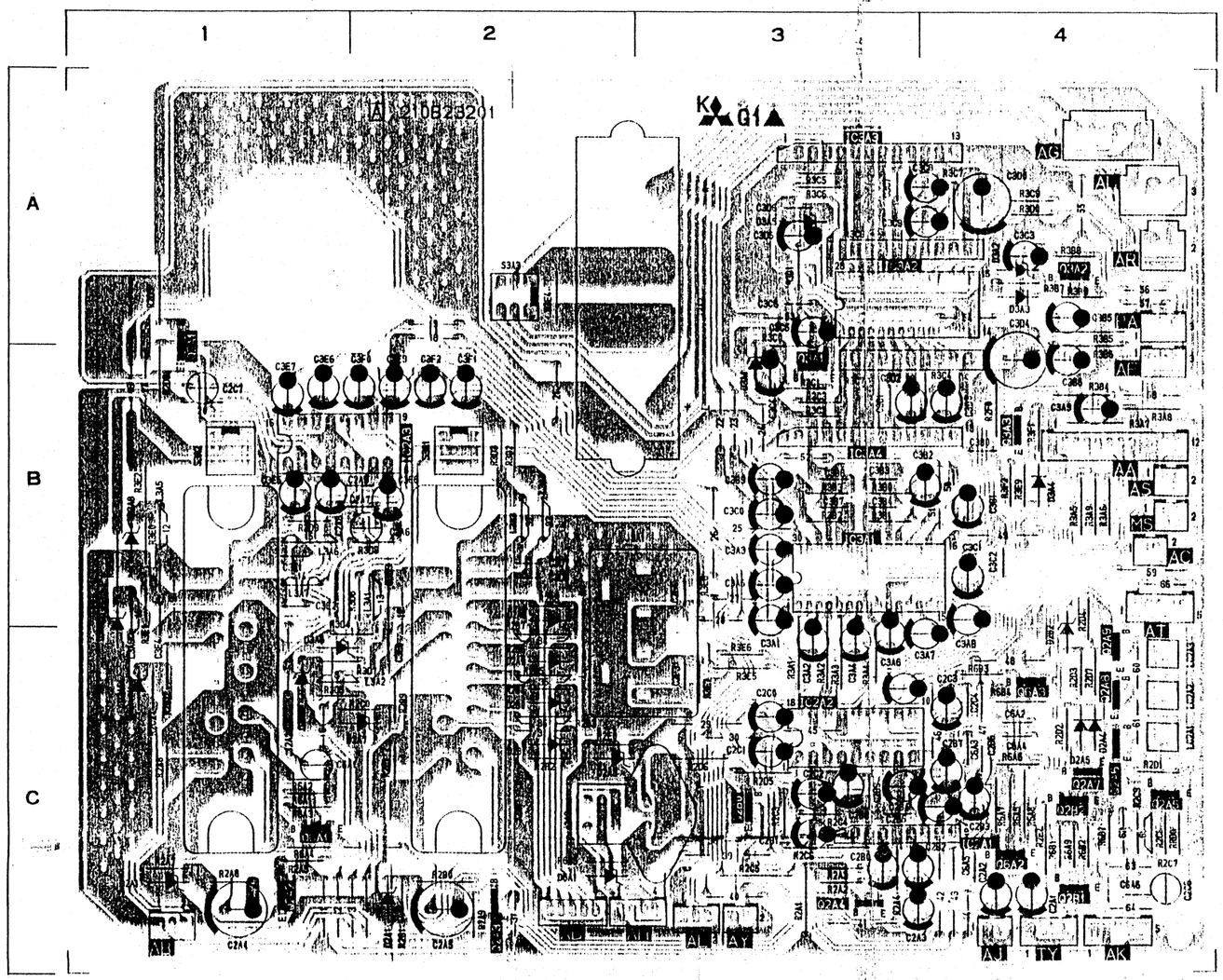
1
2
3
4
5
6
7
A
B
C
D
E
240AB480
CMK-140X
IC7705
IC7706
IC7750
IC501
SIGNAL
PRESET
AUDIO
H F
IC361

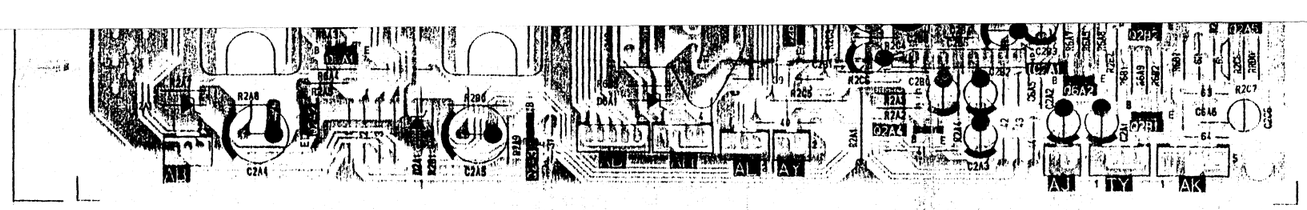

E
AUDIO
IC351
RESET

PCB POWER

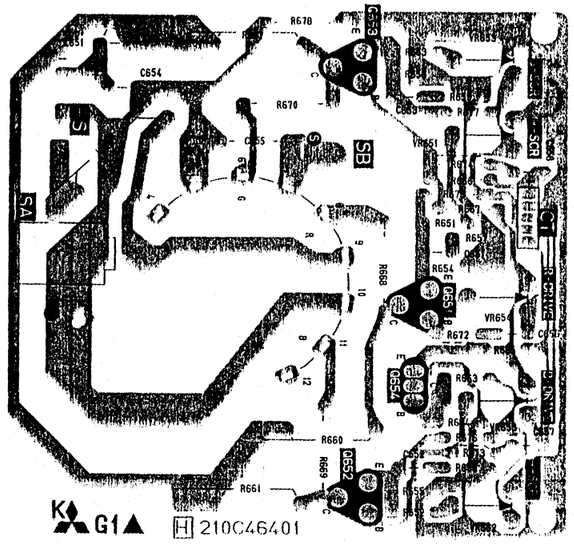

1
2
3
4
5
A
B
C
240A80201
CMK-140X
PC951
IC901
F991 T2A
PC
PX
PY
PZ

PCB PCC(COMPONENT SIDE)



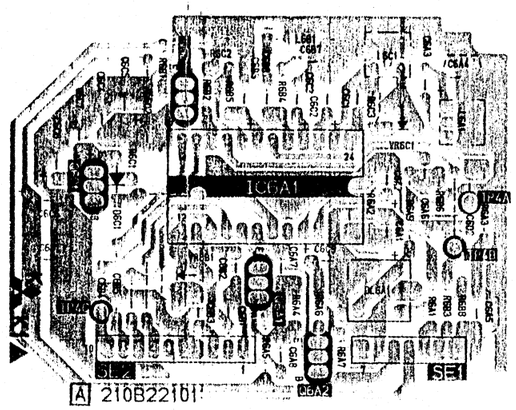


PCB CRT



H 210C46401

PCB SECAM(CT-25M1EM(G) only)



A 210B22101